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TELEGRAPHIC ADDRESS—LANCET, WESTRAND LONDON TELEPHONE NUMBER—GERRARD 5356

No. XXI. of Vol. I., 1914.
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CONTENTS.

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A REPORT of the Work at the Radium Institute from Jan. 1st to Dec. 31st, 1913, by A. E. HAYWARD PINCH, F.R.C.S. Eng., Medical Superintendent and General Director of the Radium Institute. With an Appendix on the Work of the Chemico-Physical Laboratory by W. L. S. ALTON, F.I.C. (Published with the Authority of the Committee) 1441

ORIGINAL ARTICLES.

The Diagnosis of Pulmonary Tuberculosis: the Value of Besredka's Antigen in the Complement-Fixation Test for Tuberculous Disease. By A. C. INMAN, M.A., M.B. Oxon., Superintendent of the Laboratories of the Hospital for Consumption and Diseases of the Chest, Brompton 1446

Remarks on the So-called Re-education of the Deaf. By RICHARD LAKE, F.R.C.S. Eng., Surgeon, Diseases of the Ear, Seamen's Hospital, &c..... 1449

A Contribution to the Knowledge of Experimental Nephritis. By HORST OERTEL, M.D..... 1450

Observations on Syphilis of the Central Nervous System, with a Note on Salvarsan. By J. E. R. MCDONAGH, F.R.C.S. Eng., Surgeon to the London Lock Hospital, &c..... 1454

Note on a New Combined Method of Prostatectomy. By J. LYNN THOMAS, C.B., F.R.C.S. Eng., Surgeon, King Edward VII. Hospital, Cardiff 1458

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Secondary or Symptomatic Leukæmia. By GORDON R. WARD, M.D. Lond..... 1459

Bacillus Coli as a Cause of Septic Onychia. By THOMAS HOUSTON, B.A., M.D.R.U.I., Physician-in-Charge of the Department of Hæmatology and Vaccine Therapy, Royal Victoria Hospital, Belfast; and W. W. D. THOMSON, B.A., M.B., B.Sc. Belf., D.P.H., Riddell Demonstrator of Pathology, Queen's University, Belfast, and Clinical Pathologist, Mater Infirmorum Hospital, Belfast 1461

A Case of Tetanus Treated with Subcutaneous Injections of Carbolic Acid; Recovery. By W. GRAHAM REYNOLDS, M.R.C.S. Eng., L.R.C.P. Lond., late House Surgeon, House Physician, and Resident Obstetric Officer, St. Mary's Hospital, London 1461

Niton as a Therapeutic Agent. By Sir WILLIAM RAMSAY, K.C.B., F.R.S.—(*Illustrated*) 1481

CLINICAL NOTES:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A Case of Rodent Ulcer in an Unusual Situation. By MILNE MCINTYRE, M.B., Ch.B. Glasg.—(*Illustrated*)... 1462

An Unusual Peri-sinous Abscess. By HAROLD L. WHALE, M.D. Cantab., F.R.C.S. Eng..... 1462

MEDICAL SOCIETIES.

ROYAL SOCIETY OF MEDICINE:
SECTION OF SURGERY:—The Relation of Ducts and Acini to Cysts and Cancer of the Breast..... 1463
SECTION OF LARYNGOLOGY:—Exhibition of Cases..... 1463
SECTION OF OTOLOGY:—Primary Tuberculosis of the Ear.—Exhibition of Cases 1464

EDINBURGH MEDICO-CHIRURGICAL SOCIETY:
Empyema in Children.—The Pathology and Etiology of Duodenal Ulcer..... 1464

ROYAL ACADEMY OF MEDICINE IN IRELAND:
Wassermann Reaction..... 1466

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND:
Alleged Increase of Insanity 1467

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY:
Malingering under the Insurance Act..... 1468

HARVEIAN SOCIETY:
Some Errors in Diagnosis and Treatment in Ophthalmic Practice 1468

NORTH LONDON MEDICAL AND CHIRURGICAL SOCIETY:
Prehistoric Man and his Early Efforts to Combat Disease 1468

REVIEWS AND NOTICES OF BOOKS.

The British Journal of Surgery. Volume I. 1913–14..... 1469

Acute General Miliary Tuberculosis. By Professor Dr. G. Cornet..... 1469

Biology, General and Medical. By Joseph McFarland, M.D. Second edition 1470

A Practical Treatise on Medical Diagnosis for Students and Physicians. By J. H. Musser. Sixth edition..... 1470

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Problems of School Hygiene. Edited by W. Leslie Mackenzie, M.A., M.D. Aberd., LL.D.; and Lewis D. Cruickshank, M.D. Aberd., D.P.H. 1470

The Dietetic Treatment of Diabetes. By B. D. Basu, Major, I.M.S., retired. Fourth edition..... 1471

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Miscellaneous Volumes..... 1471

The Journal of Physiology..... 1472

Schmidts Jahrbücher der In- und Ausländischen Gesamten Medizin..... 1472

LEADING ARTICLES.

TREATMENT BY RADIUM..... 1473

THE NEW MILK LEGISLATION 1474

ANNOTATIONS.

Recent Plague in Cuba..... 1475

The Supply of Cod-liver Oil... 1476

Partial Continued Epilepsy ... 1476

The Uses of Emetine 1477

A Study of Tuberculosis Contacts 1477

Medical Society of London..... 1478

Spinal Sciatica 1478

Relapses in Acute Articular Rheumatism 1478

Complement Fixation in Tuberculosis..... 1479

X Rays in the Diagnosis of Gall-stones..... 1479

A General Hospital and a Municipal Tuberculosis Scheme 1480

Diaphragmatic Pleurisy Simulating Gastric Ulcer..... 1480

VITAL STATISTICS:
Health of English Towns ... 1487
Health of Scotch Towns..... 1488
Health of Irish Towns..... 1488

SPECIAL ARTICLES.

Medicine and the Law: A Case of Unqualified Practice.—Coroners' Inquests and the Insurance Act.—A Parent and Medical Treatment for his Child..... 1483

Royal College of Physicians of London: Meeting of Comitia 1484

The Royal Society Conversazione..... 1484

Suggested Reform of Medical Education in China..... 1485

Royal College of Surgeons of England: Meeting of Council 1486

Royal Commission on Venereal Diseases..... 1486

April at Home and Abroad..... 1487

The Services..... 1489

Medical Practice under the Insurance Act. XLVI.—Colchester.—(*To be continued*)..... 1491

The International Surgical Association: Gastric and Duodenal Ulcers.—Grafts and Transplantation.—Grafting of Blood-vessels.—(*Concluded*)..... 1492

HOME AND FOREIGN NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Scotland..... 1495

Ireland..... 1496

Paris..... 1497

United States of America..... 1497

South Africa 1498

India 1499

THE NATIONAL INSURANCE ACT.

The Drug Funds in Scotland.. 1504

Exeter Insurance Committee 1504

Sheffield Insurance Committee 1504

Pharmacists and the Deficiency in the Drug Funds 1504

CORRESPONDENCE.

The Plea for Immediate Operation in Appendicitis (Mr. C. Mansell Moullin). 1500

Ankylostomiasis (Mr. Norman C. King)..... 1501

The Medical Insurance Agency (Sir Frederic Hewitt, M.V.O.)..... 1501

Diathermy in Vesical Hæmorrhage (Mr. Frank Kidd)..... 1501

Massive Collapse of the Lungs (Dr. J. Charlton Briscoe)..... 1502

South African Civil Surgeons' Dinner (Mr. F. E. Fremantle and Mr. C. Gordon Watson) 1502

Fuchsin in Soft Chancre (Mr. Chhagan H. Kantawala)..... 1502

Theories of Hysteria (Dr. Frederick Dillon)..... 1503

The Fatality of Measles (Mr. E. Halford Ross)..... 1503

An Important Correction (The Editor of the Annual Reports of the Royal Dental Hospital) 1503

"Millibars" (Sir John W. Moore) 1511

MEDICAL NEWS.

Royal Sanitary Institute 1446

Gresham Lectures, 1914 1457

Glasgow University Club, London 1458

Royal West Sussex Hospital... 1463

University of Cambridge..... 1468

Dinner to Mr. William Lang... 1475

Asylum Workers' Association 1488

British Science Guild 1490

Edinburgh University Club of London 1490

Donations and Bequests 1503

Presentations to Medical Men 1504

Pass-lists of the Royal Colleges of Physicians of London and Surgeons of England; Royal College of Surgeons of England 1505

The Lord Mayor Treloar Cripples' Hospital and College, Alton..... 1506

Metropolitan Hospital..... 1506

Chelsea Clinical Society..... 1506

Medical Society of London: Lettsomian Lectures, 1914 .. 1506

Factory Girls' Country Holiday Fund..... 1506

Royal Institute of Public Health: Lectures on Industrial Hygiene..... 1506

Ilford and its late Medical Officer of Health 1506

PARLIAMENTARY INTELLIGENCE.

Notes on Current Topics: The Milk Bill.—Milk and Dairies (Scotland) Bill.—Infants Milk Bill.—Ireland and Public Health Grants.—Midwives (Scotland) Bill..... 1507

House of Commons: A Hospital Ship.—The Drug Fund 1507

Books, &c., received 1508

Appointments 1509

Vacancies..... 1509

Births, Marriages, and Deaths 1510

Notes, Short Comments, and Answers to Correspondents 1511

Meteorological Readings..... 1511

Medical Diary..... 1512

Acknowledgment of Communications received..... 1514

FOR INDEX TO ADVERTISEMENTS SEE PAGES 2 & 4.

INDEX

MEDICAL AND OTHER BOOKS AND PUBLICATIONS

ARNOLD:—
Bolton .... Ulcer of the Stomach 9
Collie, Sir J. Malingering 9
Cowan .... Diseases of the Heart 9
Hawthorne. Forensic Medicine and Toxicology 9
Howard .... Practice of Surgery 9
Hutchison.. Food, &c. 9
Leftwich .. Treatment 9
" .. Tabular Diagnosis .. 9
Legge & Goadby .. Lead Poisoning, &c... 9
McCay .... Protein Element in Nutrition 9
Mills & Humphreys Surgery for Dental Students 9
Saundby .. Old Age 9
Silk ..... Modern Anæsthetics. 9
Stewart .... Nervous Diseases.... 9
Vincent .... Internal Secretion & Ductless Glands.... 9

BAILLIERE, TINDALL & COX:—
Wigg ..... Indigestion, &c..... 6
Buchanan .. Anatomy..... 5
Cabot ..... Physical Diagnosis Cover 1
Freyer .... Enlargement of the Prostate 6
" .... Surgical Diseases of the Urinary Organs 6
Gardner .. Surgical Anæsthesia Cover 1
Howard .... The Potato in Treatment of Gout Cover 1
Kanavel.... Infections of Hand .. 5
Mummery .. Diseases of Rectum and Anus 5

BAILLIERE—(Continued).
Pickerill .. Dental Caries, &c. .. 5
Schmieden. Operative Surgery .. 5
Török & Grout .... Surgery of the Eye Cover 1
Tredgold .. Mental Deficiency .. 5
Williams .. Minor Maladies Cover 1

BALE, SONS & DANIELSSON:—
Moullin .... When to Operate in Inflammation of the Appendix.... Cover 1

BLANCHARD COMPANY:—
Faulkner .. Tonsils & the Voice.. 6

CASSELL & CO.:—
Berkeley & Bonney .. Gynæcological Surgery 7
Morris, Sir M..... Diseases of the Skin 7
System of Surgery..... 7
Walker .... Genito - Urinary Organs..... 7
Yeo, &c..... Medical Treatment .. 7

CHURCHILL, J. & A.:—
Aaron ..... Diseases of Stomach.. 3
Box ..... Post-Mortem Manual 3
Citron..... Immunity 3
Coles ..... The Blood 3
" ..... Clinical Diagnostic Bacteriology 3
Edwards .. Diseases of Rectum, &c. ..... Cover 1
Fleming.... Practice of Medicine. 3
Hewlett .... Bacteriology..... 3

CHURCHILL—(Continued).
Lang's German - English Dictionary 3
Lewis ..... Medical Vade-Mecum 3
System of Treatment 3
Taylor .... Medicine 3
Thorne, Bezly .... Schott Nauheim Treatment of Heart 6
Wrench .... Healthy Marriage.... 3

FROWDE AND HODDER & STOUGHTON:—
McCann .. Cancer of the Womb, &c. ..... Cover 1

LEWIS:—
Armstrong . I. K. Therapy. Cover 1
Jones ..... Medical Electricity Cover 1
" ..... Ionic Medication " 1
Moullin .... Enlargement of the Prostate .... Cover 1
" .... The Biology of Tumours .... Cover 1

LONGMANS, GREEN & CO.:—
Kaye ..... X Rays..... Cover 1

MACMILLAN & CO.:—
Ballance .. Cerebral Decompression in Ordinary Practice 6

MEDICAL PUBLISHING CO.:—
Lane, Sir W. A.. Operative Treatment of Fractures. Cover 1
" Cleft Palate and Hare Lip ..... Cover 1

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Lane, Sir W. A.. Treatment of Chronic Constipation. Cover
Romer & Cressy .. Bonesetting and the Treatment of Painful Joints.... Cover 1

PULMAN & SONS:—
Elliot ..... Sclero-Corneal Trephining in Glaucoma 6

UNIVERSITY OF LONDON PRESS:
Bidwell .... Minor Surgery 6
Cole ..... Mental Diseases 6
Stevens .... Diseases of Women .. 6
Turner & Carling .. Treatment after Operation 6

WRIGHT & SONS (BRISTOL):—
Cammidge.. Fæces of Children and Adults ..... Cover 1
Mummery .. Diseases of the Colon and their Surgical Treatment .. Cover 1

MEDICAL LIBRARIES, &c.:—
An English Medical Guide to Chatel-Guyon-les-Bains .. Cover 1
Behnke—Stammering..... 6
Ketley—Stammering 6
Matthews Bros.—
Wood: Application of Trusses 6

OFFICIAL AND GENERAL ANNOUNCEMENTS

APPOINTMENTS VACANT:—
Banffshire District Lunatic Asylum 75
Beckett Hospital, Barnsley 74
Bedford County Hospital..... 70
Belgrave Hospital for Children .. 73
Birmingham City Fever Hospital. 72
Birmingham and Midland Hospital for Skin, &c., Diseases.... 71
Bradford Royal Infirmary 75
Brentford Union Infirmary, &c. .. 72
Brighton County Borough Asylum, Haywards Heath 74
Bristol Royal Infirmary 70
Bury Infirmary 70
Central London Ophthalmic Hospital 74
Chesterfield and North Derbyshire Hospital 73
Children's Hospital, Sheffield 74
City of Bradford Hospital 74
City of Hull Education Committee 72
City of Leeds Hospitals for Infectious Diseases, &c. 74
City of London Lying-in Hospital. 75
City of Nottingham Infirmary 76
Corporation of Birmingham City Hospital 72
County Asylum, Whittingham 72
County Borough of Bury 75
County Borough of Portsmouth .. 72
County Borough of St. Helens 71
County Council of Middlesex..... 75
Darlington Hospital and Dispensary 71
Devon County Asylum, Exminster 71
Durham County Asylum 71
Durham County Hospital 73
East London Hosp. for Children, &c., Shadwell 73
Eccles and Patricroft Hospital .. 72
Essex County Hospital, Colchester 70
Evelina Hospital for Sick Children 74
General Infirmary, Leeds..... 72
General Infirmary, Macclesfield .. 73
Greenock Infirmary..... 75
Hampshire County Council .. 74, 75
Hampstead General and North-West London Hospital 71
Hartlepools Hospital 72
Haywood Hospital, Burslem 74
Huddersfield Royal Infirmary 74
Hulme Dispensary, Manchester .. 73
Infectious Hospitals Service, Metropolitan Asylums Board .. 74
Jessop Hos. for Women, Sheffield. 75
Kent County Asylum, Maidstone.. 70
King Edward VII.'s Hos., Cardiff. 71
London Fever Hospital..... 74
London Hospital, Whitechapel 70
Manchester Northern Hospital for Women and Children 73
Manchester Royal Infirmary 75
Newark-upon-Trent Hospital 70
New Hospital for Women 75
North Lonsdale Hospital, Barrow-in-Furness 70
North Ormesby Hospital, Middlesbrough 70
Nottingham General Hospital..... 73
Notts County Council 75
Paddington Infirmary 74
Parish of Kirkmabreck, Kirkcudbrightshire 75

APPOINTMENTS—(Continued).
Parish of Leicester Poor-law Infirmary 73
Pinewood Sanatorium 74
Plaistow Fever Hospital 74
Portsmouth Workhouse Infirmary 72
Public Health Department of Egypt 71
Queen's Hospital for Children, Hackney-road 73
Rochdale Infirmary & Dispensary. 70
Rotherham Hospital 70
Royal Albert Hospital, Devonport 70
Royal Albert Edward Infirmary and Dispensary, Wigan 70
Royal Alexandra Hospital for Sick Children, Brighton 71
Royal Eye Hospital, Southwark .. 74
Royal Halifax Infirmary 72
Royal Infirmary, Sheffield 71
Royal Infirmary, Sunderland..... 75
Royal Portsmouth Hospital 74
Royal Sussex County Hospital, Brighton..... 72
St. Mark's Hospital for Cancer.... 75
St. Marylebone General Dispensary 71
Salford Royal Hospital 73
Salisbury Infirmary..... 70
Salop Infirmary, Shrewsbury..... 70
Salvation Army Mothers' Hosp. .. 76
Sheffield Union Hospital 75
South London Hosp. for Women.. 72
Storthes Hall Asylum, Kirkburton 72
Stroud General Hospital 70
Swansea General and Eye Hosp... 70
Ulster Hospital Corps 74
University of Aberdeen..... 75
University of London 73
University of Otago, New Zealand 70
Walsall and District Hospital 71
West Ham Union 76
West Ham and Eastern General Hospital 70
West Herts Hospital, Hemel Hempstead 71
West London Hospital, Hammersmith-road 71, 73
West Norfolk and King's Lynn Hospital 75
Westmorland Consumption Sanatorium, &c., Grange-over-Sands. 73
Wrexham Infirmary 74

ASSISTANCIES, MEDICAL..... 78

ASYLUMS, HOMES, &c.:—
Ashwood House, Kingswinford .. 59
Association of Medical Men Receiving Resident Patients 69
Bad Neuenahr Sanatorium..... 68
Barnsley Hall, Bromsgrove..... 59
Barnwood House Hospital 60
Bishopstone House, Bedford 59
Bootham Park, York 59
Brunton House, Lancaster 69
Buntingford House Retreat, Buntingford 62
Camberwell House, Peckham-road 62
Cheadle Royal..... 60
City of London Mental Hospital, Stone..... 69
Clarence Lodge, Clapham Park .. 59
Colthurst House, Alderley Edge .. 59

ASYLUMS—(Continued).
Coppice, The, Nottingham 60
Dalrymple House, Rickmansworth 62
Dartmoor Sanatorium 63
Duff House, Banff..... 63
Elliot, Southwell 69
Farnham House, Dublin 61
Ghyllwoods 63
Grove House, Church Stretton..... 60
Grove, The, Catton, Norwich..... 60
Haslemere Nursing Home 69
Haydock Lodge, Newton-le-Willows 61
Haynes, Brentwood 69
Helgham Hall, Norwich 59
Home for Epileptics, Maghull 59
Invernith Sanatorium, Colinsburgh 62
Kingsdown House, Box..... 59
Kisselbach, Bad Nauheim 69
London Fever Hospital..... 60
London Sanatorium..... 63
Lloyd, Regent's Park 78
Maison de Santé de Glain-les-Liége (Belgium) 68
Malling Place, Kent 60
Manna Mead, Blackheath 59
Maryville, Dublin 61
Melbourne House, Leicester 68
Mendip Hills Sanatorium 61
Middleton Hall, Co. Durham..... 59
Moat House, Tamworth 60
Mundesley Sanatorium 64
Newlands House, Tooting Bec Common 59
Newmains Retreat, Lanarkshire.. 63
Nordrach-on-Dee, Banchory 64
Northumberland House, Finsbury Park 59
Northwoods House, Winterbourne 61
Norwood Sanatorium, Ltd..... 62
No. 286, L.O., Strand 69
No. 912, L.O., Strand 70
Oxea Island, Heybridge..... 63
Parisian, No. 935, L.O., Strand .. 78
Peckham House..... 62
Pendyffryn Hall Sanatorium, Nordrach-in-Wales 63
Plympton House, Plympton 60
Portsmouth Corporation Mental Hospital 59
St. Andrew's Hospital, Dollis Hill 70
St. Andrew's Hosp., Northampton 60
St. Luke's Hospital for Mental Diseases 59
Shaftesbury House, Formby-by-the-Sea 61
Springfield House Private Asylum, Bedford 60
Stretton House, Church Stretton.. 63
The General Manager, Craven-st.. 69
The Grange, near Rotherham 60
Vale of Clwyd Sanatorium 64
Warneford Asylum, Oxford..... 59
Wye House, Buxton..... 60
Yarrow Convalescent Home, Broadstairs 61
Zander Institute 61

FINANCIAL, &c.:—
Equitable Reversionary Interest Society.. 58

HEALTH RESORTS, BATHS, &c.:—
Allevard-les-Bains 68
Bad Homburg 67
Bad Stachelberg..... 69
Bad Wildungen 67
Baden, Switzerland..... 65
Baden-Baden 66
Badgastein 68
Chatel-Guyon 68
Engelberg 65
Harrogate Hydropathic Establishment 58
Kreuznach 67
Leukerbad 31
Peebles Hotel Hydropathic 58
Ragaz-Pfeifers..... 66
St. Moritz, Engadine 69
Sanatorium Clavadel 66
Smedley's, Matlock 58
Westend Sanatorium, Karisbad.. 66
Woodhall Spa 64

HOTELS:—
Hotel Montana, Lucerne 65
Hotel Windsor 65
Knowle Hotel, Sidmouth 65

HOUSE & ESTATE AGENTS:—
Bedford & Co., Wigmore-street.... 77
Collins, Golder's Green..... 78
Hart, Tottenham 78
Jenkinson, Brinsley & Jenkinson, New Bridge-street 78
Ifd, Horncastles, Cheapside 77
Jenkins, Balham 78
Ley Clark, Wimpole-street 77
Montgomery, Mallow 78
No. 929, L.O., Strand 77
S., Gloucester-place 78
Squire, Sydenham..... 78
CONSULTING-ROOMS:—
No. 925, L.O., Strand 77

LIFE & FIRE ASSURANCES, &c.:—
Prudential..... 56

MASSAGE:—
Associated Male Nurses and Masseurs 56
London School of Massage 56
School of Massage and Swedish Remedial Exercises..... 56

MEDICAL ACCOUNTANTS, &c.:—
Turner 77

MEDICAL AGENTS:—
Fieldhall, Limited..... 79
Johnson 78
Manchester Clerical, &c., Assoc.. 79
Medical Agency 79
Moore & Co. 76
Needes, Herbert..... 78
Needes, J. C. 79
Peacock & Hadley..... 79
Scholastic, Clerical, &c., Association..... 80
Turner 79

MEDICAL SCHOOLS:—
(LONDON.)
Guy's Hospital 54
London School of Clinical Medicine 55
West Lond'n Post-Graduate Coll.. 54

For continuation of Index to Official and General Announcements, and Trade and Miscellaneous Advertisements, see page 4.

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INDEX—(CONTINUED).

PAGE

NURSING INSTITUTES:—
Certificated Nurses Association .. 57
Co-operation of Temperance Male and Female Nurses 57
General Nursing Association..... 56
Hospital for Sick Children, Great Ormond-street 56
Leeds Trained Nurses' Institution 56
London Nurses' Association 56
London Temperance Male and Female Nurses Co-operation .. 57
Male Nurses Temperance Co-operation..... 56
Mental Nurses' Co-operation..... 56
Nurses' Co-operation, Portland-place..... 56
St. John's House..... 56
St. Luke's Hospital..... 56
Temperance Association of Male Nurses, Ltd..... 57

PAGE

NURSING INST.—(Continued).
Temperance Male Nurses Co-operation 56
Temperance Male and Female Nurses Co-operation 57
The Retreat, York 56

OFFICIAL NOTICES:—
Central London Throat, Nose and Ear Hospital 55
City of London Lying-in Hospital 54
Dr. Edith Pechey Phipson Post-Graduate Scholarship 54
Federation Abolitioniste Internationale 54
Guy's Hospital 54
Hospital for Sick Children, Great Ormond-street..... 55
London Hospital 55

PAGE

OFFICIAL NOTICES—(Continued).
London Nerve Clinic 55
London School of Tropical Medicine 55
Medico-Psychological Association of Great Britain and Ireland.... 55
North-East London Post-Graduate College 54
Queen Charlotte's Lying-in Hospital 54
Royal Society of Medicine Cover 4
St. Mary's Hospital Medical School 55
Throat Hospital, Golden-square . 55
University College Hosp. Medical School 54
University of London 55
University of London, King's College 55
West End Hospital for Diseases of Nervous System..... 54

PAGE

OFFICIAL NOTICES—(Continued).
York-road General Lying-in Hospital, Lambeth 54

PARTNERSHIPS & PRACTICES 70

RAILWAY & STEAMSHIP CO.'S:—
New Zealand Shipping Co. 56

SCHOOLS, PREPARATORY, &c.:—
British and Foreign Schools Agency, Manchester 56
Institution Notre Dame, La Ferté-Macé 55

TUTORS & LECTURERS:—
Carter 56
Gemmell 55
Med. Corres. College 54
Schnelle 6
Mueller-Walle System of Lip Reading 14
Weymouth .. 54

TRADE AND MISCELLANEOUS ADVERTISEMENTS

AMBULANCES:—
St. John Ambulance—
Invalid Carriages 10

BOTTLE MERCHANTS:—
Isaacs 52

CARRIAGES, MOTORS, &c.:—
Armstrong—
Coachmen's, Grooms', and Chauffeurs' Liveries 10
Bayard Cars, Ltd.—
Bayard Cars 11
Dunlop Rubber Co., Ltd.—
Dunlop Tyres and "V" Golf Balls 11
Morgan & Co.—
Morgan-Adler Carette 11
United Motorists Co-operative Supply 10

CHEMISTS & DRUGGISTS:—
Allen & Hanburys—
Antitoxins, &c. 37
Byno Hypophosphites.. Cover iv
Castor Oil 48
Angier Chemical Co.—
Angier's Emulsion 24
Armbrecht, Nelson & Co.—
Radium Emanation Water.... 50
Bishop, Ltd.—
Hydropyrin 25
Kalmopyrin 25
Brésillon & Co.—
Iodéol 44
Iodargol 44
British Oxygen Co.—
Oxygen 50
Bullock & Co.—
Pepsina Porci 17
Acid Glycerine of Pepsine 17
Burroughs Wellcome & Co.—
Physiological Criteria 41
Carnrick & Co.—
Liquid Peptonoids 39
Christy & Co.—
Glyco-Thymoline 28
Ergoapiol 47
Clay, Paget & Co.—
Glycolactophos 21
Duncan, Flockhart & Co.—
Pure Chloroform 38
Eosoient Compounds, Ltd.—
Eosoient Compound 53
" Powder 53
" Soap 53
Evans Sons Lescher & Webb—
Capsul. Ol. Santal. Flav. 31
Algiron 31
Diluted Tuberculins 31
Anti-Diphtheritic Serum 31
Fellows—
Syrupus Hypophosphitum 23

CHEMISTS—(Continued).
Gale & Co., Ltd.—
Entrapuro 46
Sugosanum 46
" Antiseptics' 46
Grillon—
Tamar Indien Grillon 17
Heppel & Co.—
Filudine 32
Globeol 32
Jubol 32
Urodonal 32
Hewlett & Son—
Mist. Hepatica Conc. .. Cover iii
Hogg & Son—
Protein Nerve Food 46
Hudson's Eumenthol Chemical Co.—
Eumenthol Jujubes 18
Kutnow & Co.—
Kutnow's Powder 35
Maltine Manufacturing Co.—
Maltine with Cod Liver Oil 39
" Compounds 39
Maltona Wine Co.—
Maltona Tonic Wine 48
Merck—
Stypticin 32
Parke, Davis & Co.—
Pollacine 34
Hay Fever Reaction Outfit 34
Raimes & Co.—
Klinger's Nutrient Suppositories 48
Saccharin Corporation, Ltd.—
Diamalt ..... Cover iii
Novocain ..... " iii
Trivalin ..... " iii
Tulloch's Alloys ..... " iii
Saccharin ..... " iii
Smith & Co.—
Half's Wine 49
Tidman's Sea Salt 48
Waterbury Chemical Company—
Cod Liver Oil Compound 48
Pinozyme 48
Welford & Sons—
Sauermilch ..... Cover ii
Humanised Milk ..... " ii
Assos' ..... " ii
Wilcox, Jozeau & Co.—
Nativelle's Crystallised Digitaline 47
Willows, Francis, Butler & Thompson, Ltd.—
Drugs 24
Pollantin 48
Wulfing & Co.—
Formamint 21
Zimmermann, A. & M.—
Schering's Hegonon 22
Schering's Hormonal 22
Zimmermann & Co.—
Radiogen 43
" Emanatorium 43

DISINFECTANTS:—
Allen & Hanburys
Medical Izal 38
Condy's Fluid 18
Ferris & Co.—
Kresapol 45
Creophen 45
Universal Disinfecting Fluid.. 45
Quibell Bros., Ltd.—
Kerol 47
" Capsules 47
Zimmermann & Co.—
Lysol 17

ENGRAVERS (NAME PLATES) &c.—
Cooke & Co.—
Brass Name Plates and Lamps 52
Osborne & Co.—
Brass Door Plates 10

FOODS:—
Aylesbury Dairy Co.—
Humanised Milk 50
Benger's Food, Ltd.—
Benger's Food 29
Biomalz 45
Blatchley's Diabetic Preparations 46
Casein Limited—
Vitalitas 49
Fairchild Bros. & Foster—
Pepsencia 40
Peptogenic Milk Powder 40
Mellin's Food, Ltd.—
Mellin's Food 18
Nestlé's Swiss Milk..... 25
Peter's Swiss Milk Chocolate..... 30
Valentine's Meat Juice Co.—
Meat Juice 32
Van Abbot & Sons—
Foods for Diabetics and Obesity 51
Wulfing & Co.—
Albulactin 22

FURNITURE, &c.:—
Carter—
Commode Chair, &c. 14

HOSPITALS (ISOLATION):—
Browne & Lilly—
Revolving Chalets, &c. 78

MED. & SURG. APPLIANCES:—
Arnold & Sons—
Portable Oxygen Generator .. 15
Bailey & Son—
Abdominal Belts 14
Davis—Lukens Sterile Catgut 10
Down Bros., Ltd.—
New Operation Table 16
Galen Mnfg. Co.—
Lister's Dressings & Ligatures 52
Hawksley & Sons—
Knee Trusses 53
Hoefflcke—
Hoefflcke's Extension Appliances 42
Millikin & Lawley—
Osteology, &c. 52

MED. APPLIANCES—(Continued).
Noelle—Dr. Dettweiler's Spitting Flasks 53
Robinson & Sons—
Capsicum Gamgee Tissue 40
Timpson & Co.—
Zo Adhesive Plaster 53

MINERAL WATERS:—
Apollinaris Co.—
Apollinaris 48
Camwal, Ltd.—
Aerated Lithia Water..... 51
Davis—Hercules Water 51
Dal Mar—Vittel 50
Evian-Cachat Agency—
Evian-Cachat Water 28
Ingram & Royle—
Gleesthlibter Mineral Water.... 19
Vichy-Célestins 20
Royal Fachingen Natural Mineral Waters 17
Rubinat-Llorach 20

STATIONERY, &c.:—
Burge, Warren & Ridgley—
The "Compacto" Stylo 51

TAILORS, BOOTMAKERS, &c.:—
Dowie & Marshall—
Hygienic Bootmakers..... 52
Evans & Co.—
Regent Morning Coat..... 16

TYPEWRITING, &c.:—
Taylor's Typewriters 16

VACCINE LYMPH:—
Dr. Fonndorf's Dry Vaccine 10
Jenner Institute for Calf Lymph . 10
Kenner's Calf Lymph Establishment 10
Roberts & Co.—
Chaumier's Calf Lymph 10

WINES, BEER, SPIRITS, &c.:—
Dunville's Irish Whisky 19
Gilbey—Invalid Port Wine 27

X-RAY, &c., APPARATUS:—
Grant—
Lumière X-Ray Plates 52
Sanitas Electrical Co.—
Ionic Medication 15

MISCELLANEOUS:—
Connaught Motor Carriage Co.—
Siddeley-Deasy Stoneleigh Coupé 78
Hepworth, Highgate—Typewriting 76
Patouret, Crosby-on-Eden—
Goats' Milk 78
Portman Income Tax Relief Agency..... 78
Randall Bros.—Paripan 12
Shearer, Tavistock-square—
Scientific Translations 78

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OF
THE WORK AT THE RADIUM INSTITUTE FROM JAN. 1ST TO DEC. 31ST, 1913.

BY A. E. HAYWARD PINCH, F.R.C.S. ENG.,
MEDICAL SUPERINTENDENT AND GENERAL DIRECTOR OF THE RADIUM INSTITUTE.

With an Appendix on the Work of the Chemico-Physical Laboratory by W. L. S. ALTON, F.I.C.

(Published with the Authority of the Committee.)

THIS report deals with the cases which have presented themselves at the Radium Institute from Jan. 1st to Dec. 31st, 1913, inclusive. The experiences of the past year tend on the whole to confirm the conclusions set forth in the report of the first 17 months' work, but some few additional facts have been noticed, which serve to increase our knowledge in respect of the prognosis and treatment of various diseases.

TABLE I.—*Summary of Cases.*

Examined but not treated	112
Recently treated, and results not yet noted	176
Received prophylactic irradiation only	30
Apparently cured	56
Cured	18
Improved	341
Not improved	152
Abandoned treatment	50
Dead	37
Total	972

TABLE II.—*Classification of Cases.*

Disease.	Examined, but not treated.	Results not yet noted.	Prophylactic treatment only.	Apparently cured.	Cured.	Improved.	Not improved.	Abandoned treatment.	Dead.	Total.
Carcinoma, squamous-celled—										
Glabrous skin	1	—	1	2	—	4	4	1	—	13
Buccal, oral, lingual, and pharyngeal mucous membranes	6	10	6	—	—	9	15	3	4	53
Œsophagus	5	—	—	—	—	4	4	1	—	14
Larynx	1	2	—	—	—	1	—	—	—	4
Vagina and vulva	—	—	1	1	—	3	1	1	1	8
Uterus	—	2	2	—	—	27	8	1	2	42
Penis	—	—	—	—	—	—	1	—	—	1
Bladder	—	—	—	3	—	3	—	1	2	9
Carcinoma, spheroidal-celled—										
Breast	11	22	11	2	—	40	19	11	12	128
Liver and gall-bladder	—	—	—	—	—	1	—	—	—	1
Thyroid	—	—	—	—	—	3	—	—	1	4
Paget's disease	—	—	—	1	—	—	—	—	—	1
Carcinoma, columnar-celled—										
Large intestine	1	4	2	—	—	—	—	1	1	9
Rectum	9	9	1	—	—	23	16	—	6	64
Stomach	—	—	—	—	—	1	1	1	—	3
Ovary	—	2	—	—	—	—	1	—	2	5
Prostate	1	—	—	—	—	4	—	—	—	5
Kidney and suprarenal gland	—	1	—	—	—	—	—	1	—	2
Parotid	—	—	—	—	—	—	1	—	—	1
Rodent ulcer	4	21	2	40	—	34	7	3	—	111

TABLE II.—(*Continued*).

Disease.	Examined, but not treated.	Results not yet noted.	Prophylactic treatment only.	Apparently cured.	Cured.	Improved.	Not improved.	Abandoned treatment.	Dead.	Total.
Sarcomata—										
Spindle-celled	1	—	1	1	—	8	4	1	1	17
Round-celled	1	—	—	—	—	1	—	—	1	3
Melanotic	—	—	1	—	—	—	1	—	—	2
Myelosarcoma	1	—	—	—	—	1	—	—	—	2
Lymphosarcoma	—	1	—	—	—	2	—	—	—	3
Endothelioma	—	2	2	—	—	2	2	1	1	10
Lymphadenoma	—	—	—	—	—	4	2	1	—	7
Malignant glands	1	1	—	—	—		2	3	2	13
Parotid tumour	—	—	—	—	—	—	1	—	—	1
Abdominal tumour	—	—	—	—	—	—	1	—	1	2
Mediastinal tumour	—	1	—	—	—	4	—	1	—	6
Villous tumour of bladder	—	—	—	—	—	2	1	—	—	3
Polypi of vagina	—	—	—	—	1	—	—	—	—	1
Adenoma of thyroid	1	2	—	—	—	—	—	—	—	3
Fibromata	3	—	—	—	1	3	2	1	—	10
Fibroid disease of uterus	—	1	—	—	—	6	—	—	—	7
Leucoplakia	2	—	—	1	—	2	—	—	—	5
Nævi—										
Capillary	—	4	—	—	1	19	1	—	—	25
Cavernous	1	1	—	—	2	8	2	—	—	14
Moles, warts, and papillomata	1	2	—	—	8	6	1	—	—	18
Tuberculosis—										
Glands	—	—	—	1	—	2	—	—	—	3
Skin	1	—	—	—	—	5	—	—	—	6
Conjunctiva	1	—	—	—	—	—	—	—	—	1
Spring catarrh	—	—	—	1	—	1	—	—	—	2
Chronic inflammations	1	1	—	—	2	3	—	—	—	7
Chronic ulcerations	1	—	—	—	1	6	1	—	—	9
Skin diseases—										
Keloid and vicious cicatrices	2	2	—	2	—	10	1	—	—	17
Lupus erythematosus	—	—	—	—	—	6	—	—	—	6
Psoriasis	—	1	—	—	—	4	2	—	—	7
Pruritus	—	2	—	—	2	2	2	—	—	8
Chronic eczema	—	—	—	—	—	3	1	—	—	4
Lichenification of skin	—	—	—	—	—	1	—	—	—	1
Mycosis fungoides	—	—	—	—	—	1	—	—	—	1
Roentgen-ray dermatitis	—	—	—	—	—	—	1	—	—	1
Telangiectasis	—	—	—	—	—	1	—	—	—	1
Hypertrichosis	—	—	—	—	—	—	1	—	—	1
General diseases—										
Arterio-sclerosis	3	1	—	—	—	2	1	1	—	8
Exophthalmic goitre	1	1	—	—	—	4	—	—	—	6
Myelogenous leukæmia	—	—	—	—	—	1	—	—	—	1
Myasthenia gravis	—	—	—	—	—	—	1	—	—	1
Neurasthenia	1	—	—	—	—	2	—	3	—	6
Neuritis	6	5	—	—	—	5	3	—	—	19
Neuralgias	—	2	—	1	—	2	1	—	—	6
Gout	—	2	—	—	—	3	—	2	—	7
Rheumatism	3	2	—	—	—	1	—	3	—	9
Arthritis deformans	41	69	—	—	—	47	39	8	—	204
Totals	112	176	30	56	18	341	152	50	37	972

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The results obtained in the treatment of epitheliomata affecting glabrous surfaces call for no fresh comment, and in suitable instances removal of the growth by radium may be confidently anticipated.

Epitheliomata of the buccal, lingual, and pharyngeal mucous membranes still prove both refractory and disappointing in their response to radium, but a new method of treatment has recently been devised which in instances of cancer of the tongue has given distinctly encouraging results; it consists in the burying within the carcinomatous nodule of a very small but intensely powerful radium emanation tube possessing an initial activity equivalent to that of 80 to 100 mgm. of radium bromide enveloped in a screen of 1 mm. of silver or 0·3 mm. of platinum, and giving an exposure of 24 hours' duration. A fairly severe reaction follows, and in some cases the nodule ceases to grow and becomes replaced by dense fibrous tissue.

Several cases of *epithelioma of the œsophagus* have been under treatment, but unfortunately the majority of these have been in so advanced a stage as to preclude all hope of success. In those instances, however, where complete occlusion had not occurred and it was possible to introduce radium actually into the lumen of the growth, distinct though temporary benefit has resulted, and that this effect is not merely a mechanical one due to the dilation of the stricture by the apparatus is evidenced by the fact that the improvement in the power of swallowing has persisted for six or even nine months after the termination of the treatment.

Carcinoma of the uterus still continues to yield most gratifying results, and the effects of radium treatment in inoperable cases are far in advance of those obtained by any other known medical or surgical methods. The local manifestations of the disease are benefited in the most striking fashion, and the complete disappearance of fungating growth, arrest of hæmorrhage and discharge, healing of ulceration and relief from pain, are phenomena of almost daily occurrence. In favourable cases, moreover, the treatment appears to exert a distinctly retarding influence on the dissemination of metastatic deposits and thus to arrest the progress of the disease. It is not possible, however, to speak of "cure" even in these latter instances.

Great care must be exercised in the treatment of recurrences which make their appearance within six months of the performance of a Wertheim's operation. The functions of the trophic nerves of the pelvis seem often to be seriously impaired by the extensive and elaborate dissection which is associated with this method of hysterectomy, and for this reason the amount of radium used should be small, not exceeding 50 mgm., the screening not less than 1·5 mm. of lead, and the total exposure not longer than 20 hours, spread over four or five days. Unless these precautions be observed a severe and extensive destructive reaction may follow the application of radium.

In all cases where radium is applied within the vagina the patient should be instructed to douche freely night and morning for at least six weeks after the termination of the treatment, as unless this be done an adhesive vaginitis not infrequently occurs. In some extremely susceptible subjects a transient proctitis has been noted to follow upon intravaginal treatment.

The screening employed in cases of carcinoma of the uterus is either 1 mm. of silver or 2 mm. of lead, but the thinner screening should only be adopted when the cervical canal is patulous and the tube can be introduced into its cavity.

Spheroidal-celled Carcinoma.

Carcinoma of the breast.—The number of patients with this disease applying for treatment far exceeds that of any other malignant condition.

The policy of declining to treat operable cases is still rigidly adhered to (unless the patients have absolutely refused to submit to operation), and radium is used as a last resource. Many patients exhibit a great susceptibility to radium, the primary growth becomes smaller, infected glands and subcutaneous nodules lessen or perhaps even disappear.

Little or no effect appears to be exerted in the prevention of metastatic deposits, though the treatment does not, at any rate, hasten their dissemination.

Some cases in which pleurisy, dependent upon carcinomatous invasion of the pleura, has been present have shown remarkable improvement; and the application of powerful apparatus screened with 2 mm. of lead over the affected pleura, after a preliminary paracentesis, has effectually prevented the further formation of pleuritic effusion.

A few patients have been under treatment at intervals of three or four months since the opening of the institute in September, 1911, and it has been noted that a stage in their treatment is reached sooner or later at which the response to radium fails and the benefit derived becomes negligible.

Small isolated recurrent nodules, inoperable by reason of their attachment to the sternum, clavicle, ribs, or rib cartilages, are best treated by burying a small powerful emanation tube screened with 1 mm. of silver in them for a period of 24 hours.

Carcinoma of thyroid.—Encouraging results have been obtained in the few instances that have come under notice; the progress of the disease has been arrested, and a decrease in the size of the existing growth has been obtained, the general discomfort and dysphagia when present being greatly relieved. The line of treatment employed has been the use of numerous powerful applicators screened with 2 mm. of lead, and so disposed over the surface of the growth as to obtain the maximal "cross-fire" irradiation. Burying of emanation tubes within the growth has not yet been adopted owing to the great tendency of these growths to fungate if any breach be made in the investing skin.

Paget's disease.—The superficial lesion in this condition is usually speedily cured by one hour's exposure to a half strength plate unscreened, but the underlying induration and affection of glands, if present, require prolonged treatment with heavily screened applicators if any real benefit is to be obtained. In cases where the patient is willing to submit to operation this procedure should always be adopted.

Columnar-celled Carcinoma.

Carcinoma of rectum.—This disease displays much variation in its response to radium therapy, and numerous factors have to be considered in prognosis. Speaking generally, the soft annular and vascular type of growth is much more favourably affected than the flat, hard, non-annular plaque with much subjacent induration. In the treatment of this latter class of growth the action of the gamma rays (which it is impossible to prevent) on the healthy rectal mucous membrane opposite the plaque produces a proctitis, which, though generally transient, sometimes proves both persistent and severe, and adds greatly to the patient's discomfort. In the treatment of the former type, if the radium tube be of proper dimensions and introduced

accurately within the lumen of the growth, little or no healthy mucous membrane is affected by the gamma rays, and no proctitis occurs.

Growths situated in the upper half of the rectum appear to be more amenable to treatment than when in the lower, though this may be due to the fact that tenesmus is always more constant and severe when the growth is near the sphincters.

The performance of a colostomy before radium treatment is often advisable, as the constant passage of fæces over a surface that is reacting to radium frequently causes much pain.

Idiosyncrasy is sometimes responsible for curious results. Some patients are extremely susceptible to the action of radium, and proctitis appears quickly, is very severe, and persists for a long time. With others the reaction sometimes takes six or eight weeks to develop, proceeds exceedingly slowly, and does not disappear for two or three months.

The routine method of treatment consists of a 30-hour exposure—five days of six hours each—with a tube containing 100 mgm. of radium bromide, screened with 2 mm. of lead and 3 mm. of rubber, and applied in actual contact with the growth, the series of exposure being repeated at the end of six weeks. If the patient proves extremely susceptible smaller doses are given at shorter intervals. In the most favourable cases the carcinomatous material shrinks and becomes replaced by dense fibrous tissue. In instances where the original growth has been of the annular type a fibrous stricture will result, which will need frequent and regular dilatation.

Carcinoma of prostate.—The number of cases of this condition which have been treated up to the present is not very large, but benefit has been noted in all of them. Hæmaturia when existent has been either diminished or abolished, pain has been greatly lessened, and the size of the growth decreased. Various methods of treatment have had to be adopted according to the nature of the case. When catheterisation can be well tolerated a 50 mgm. tube of radium bromide in a "window" screen of 1 mm. of silver and 1 mm. of lead is introduced per urethram and maintained in actual contact with the growth for a period of two hours a day on five successive days, and its action is supplemented by another tube of 100 mgm. in a screen of 2 mm. of lead, introduced into the rectum for six hours a day on five successive days. When catheterisation is not practicable or advisable the action of the rectal tube is reinforced by a powerful flat applicator screened with 2 mm. of lead and placed either on the perineum or over the pubes.

Carcinoma of bladder.—Nine cases of this disease have been treated and in six instances the results have been most gratifying. The hæmaturia, cystitis, and all subjective symptoms have disappeared and cystoscopic examination has shown that the size of the growth has been greatly lessened and any ulcerated surface has become covered with healthy epithelium.

The treatment has consisted of the introduction of a 50 mgm. tube of radium bromide in a "window" screen of 1 mm. of silver and 1 mm. of lead inserted per urethram, and maintained by means of a pliable silver wire in such a position that the window-side of the apparatus is in actual contact with the growth. If the lesion be on the base of the bladder a second tube screened with 2 mm. of lead is placed in the vagina in female and in the rectum in male patients, but if on the anterior bladder wall a flat applicator similarly screened is fixed over the pubic region. The usual length of exposure is 10 hours intravesically in five days of two hours each, and 30 hours with the vaginal, rectal, or pubic applicators spaced over the same number of days.

Rodent ulcer.

Little has been added to our knowledge of the treatment of this condition, but when dealing with the question of prognosis it appears justifiable to divide rodent ulcers into two definite clinical types: (1) The hypertrophic nodular type, with slight superficial ulceration of a scaly character (this class responds extremely well to radium and yields most satisfactory results); and (2) the excavating type, with undermined and overhanging edges and a gelatinous base (this not infrequently proves very intractable and repair is most difficult to effect). Whenever the size and situation of the ulcer permit, it is best to give one powerful unscreened exposure, a full strength plate being applied in actual contact with the ulcer for one, two, or three hours, according to circumstances. One such treatment usually suffices to produce an apparent cure. Exposures of short duration repeated at frequent intervals are not nearly so effectual, and instances have been met with where the adoption of this procedure appears to have been responsible for the development of an epithelioma on the site of the original ulcer.

Rodent ulcers attacking cartilage, bone, or mucous membranes are very refractory; though an exception should be made with regard to the orbital mucosa, which is generally very amenable to the action of radium.

SARCOMATA AND OTHER CONDITIONS.

Speaking in general terms, *sarcomata*, if taken in their early stages and before dissemination has occurred, do very well under radium treatment. The burying within the growth of tubes of radium salts or radium emanation should be resorted to whenever practicable, and the action of these tubes may be much helped by the external application of radium plates heavily screened. It is important to use a large quantity of radium and to give a heavy dosage. Small doses should be avoided as they exert a distinctly irritating effect and stimulate the growth of the tumour. The best results are obtained in sarcomata of the tonsil and post-nasal space, and the results in many such cases are amazing, the growths completely disappearing within six weeks of the treatment. Lymphosarcomata also give excellent results. Melanotic sarcomata are not influenced by radium, and in the few cases that have been treated no benefit has been observed.

Lymphadenoma.—When the disease is localised and confined to one or more small superficial areas, the disappearance of the enlarged glands is frequently brought about by the use of radium, and the progress of the disease is thus arrested. When, however, the condition is generalised the employment of numerous large and powerful applicators becomes necessary, and this heavy dosage is almost always followed by severe systemic disturbance with high temperature and general malaise. After the reaction has subsided considerable improvement is often apparent, but this is only temporary in character, and the condition sooner or later returns with increased severity.

Mediastinal tumours.—In almost every instance that has come under observation the rate of growth has been very markedly checked by the use of

radium, and in one or two cases a definite decrease in the size of the tumour—as seen by X ray screening—has undoubtedly occurred. If the condition be accompanied by an accumulation of fluid in the pleura, and paracentesis be performed, radium appears to exert a very remarkable action in lessening the tendency to the production of further effusion. In these cases the use of a very large quantity of radium (400–500 mgm.) is indicated; the applicators should be screened with 2 mm. of lead and disposed in such fashion over the chest wall as to procure the maximum "cross-fire" irradiation.

Treatment must be very persistent, a total exposure of not less than 30 hours should be given, and the series repeated at the end of four weeks. This heavy dosage is almost invariably followed in two or three days by a feeling of great fatigue and exhaustion, but this condition passes off completely in about a week's time.

Fibroid disease of the uterus.—Radium exerts a most beneficial action upon the distressing symptoms, menorrhagia and metrorrhagia, which are the almost invariable concomitants of this condition, though it seldom produces any very great diminution in the size of the uterus. As the cervical canal is rarely sufficiently patulous to admit a screened radium tube without previous dilatation, and patients are often averse from this, the treatment may be carried out by the introduction of a tube containing 100 mgm. of radium screened with 2 mm. of lead into the posterior fornix, and applying a plate of from 80 to 100 mgm. similarly screened over the fundus uteri. The total exposure should be between 30 and 60 hours, spread over from five to ten days, and the series should be repeated after six or eight weeks. The first effect noted is the checking of the metrorrhagia, and this is followed by a progressive decrease of the menorrhagia until the flow becomes normal or sometimes ceases altogether.

Leucoplakia.—Leucoplakic patches on the tongue, cheek, or vulva are speedily removed by radium, but they tend to recur sooner or later. Half-strength plates screened with 1/10 mm. of lead should be used, and exposures varying from one to three hours' duration, according to the thickness of the lesion, should be given. A slight superficial reaction takes place and the patches disappear.

Nævi and other Conditions.

Flat superficial nævi, capillary nævi, "port wine stains."—Before expressing an opinion as to the possibility of radium treatment effecting an improvement in any particular instance, it is advisable to subject the lesion to diascopy. If blanching be readily effected by gentle pressure the result of the treatment will probably be satisfactory; but if it be found impossible to produce blanching except by great pressure, it is unlikely that radium can do much for the condition. Infinite patience is necessary in the treatment of superficial nævi, and the utmost caution must be observed. The effect of each exposure should be most carefully studied, as too frequent treatments or excessive dosage may result in the production of troublesome telangiectases. It is better to use quarter or half strength applicators screened with 1/100 mm. of aluminium and to start with short exposures of from 15 to 20 minutes' duration, gradually increasing the length of the same until a satisfactory reaction has been obtained. So soon as the lesion has assumed a salmon-pink colour the screening should be altered to 1/10 or 2/10 mm. of lead, and the length of exposure increased to one, one and a half, or two hours.

Cavernous nævi.—These do excellently under radium, especially when of such shape that "cross-fire" radiation is possible. Half-strength applicators screened with 1/10 mm. of lead should be employed, and the exposure should be from one to three hours' duration, spread over three successive days. Little or no surface reaction is produced by this method of treatment, and the nævus shrinks gradually and steadily. If on palpation the presence of a pulsating vessel is appreciable the case is not likely to prove completely successful unless the vessel be first ligated.

Warts and papillomata.—These all yield readily to short exposures of from 20 minutes to one hour's duration with half-strength apparatus unscreened. The reaction is but slight and the resultant scar scarcely noticeable.

Tuberculosis of glands.—In cases where surgical measures have been declined for cosmetic reasons radium often proves of considerable value, either when used alone or as an adjunct to vaccine treatment. Heavily screened exposures of 30 or more hours' duration should be resorted to and an effort made to secure "cross-fire" irradiation where practicable. If the glands be caseating radium treatment is of but very little use.

Lupus vulgaris.—As a routine treatment for this disease Finsen light is greatly to be preferred to radium, but where the former fails to effect a cure or improvement radium sometimes proves of great use. Unscreened exposures of one or two hours' duration must be given and a destructive reaction produced. The resultant scar is usually firm, smooth, supple, and inconspicuous.

Spring catarrh.—In this condition the employment of radium is strongly to be advocated, as it will often cure the most intractable cases. Personal idiosyncrasy is, however, a very important consideration, and it is essential to proceed with great caution, giving short unscreened exposures at intervals of a fortnight and carefully noting the reaction. If the dosage be accurately adjusted the granulations on the orbital conjunctiva gradually disappear; there is no marked inflammation and no resultant scarring of the mucous membrane. A special form of applicator should be used which can readily be introduced into the conjunctival fornices. It should be of full strength, and the first exposure should not exceed 15 minutes' duration. No screening is employed. If the effect be not satisfactory the length of the exposure may be increased to 20, 25, or 30 minutes until the desired result is obtained.

SKIN DISEASES.

Keloid.—This condition continues to give most excellent results when treated with radium, and a great improvement, if not complete cure, can be safely predicted. In tender and painful keloids the anæsthetic effect of radium is generally very marked, and appears very early in the treatment. Screening with 1 mm. of silver is almost always employed, and an exposure of from 18 to 30 hours spread over from three to five days, according to the size and thickness of the lesion, is given. This brings about a gradual absorption of the keloidal tissue unaccompanied by any surface irritation.

Lupus erythematosus.—This very intractable and puzzling disease often responds favourably to radium, even after all routine methods have failed.

Short exposures with half or quarter strength apparatus lightly screened and repeated at intervals of four weeks give the best results.

Psoriasis and chronic eczema.—Both of these conditions generally yield readily to short unscreened exposures of from two to five minutes' duration, given on three successive days, the series of exposures being repeated at intervals of a fortnight. The patches quickly disappear after a slight superficial reaction, and in eczematous cases there is but little tendency to recurrence. With psoriasis, however, the disease almost invariably reappears after a time, though with some patients the interval that elapses may be of many months' duration.

Lichenification of the skin.—This affection, with its attendant intolerable itching, is quickly relieved and often completely cured by one exposure of 10 or 15 minutes' duration to a half-strength applicator screened with 1/100 mm. of aluminium. Some very obstinate cases which have hitherto defied all the usual methods of treatment have responded most favourably to this procedure; the lesions have disappeared and have not recurred.

Pruritus.—The analgesic effect of radium is often of the greatest use in this disease, and short unscreened exposures frequently produce a degree of relief which is unattainable by any other measures. This is especially noticeable if the pruritus occur in association with a definite lesion such as leucoplakia or hyperkeratosis. If the dosage be carefully considered and the treatment repeated at fortnightly intervals until the skin is restored to its normal condition, complete and permanent cure may result. If, however, the condition be a neurosis the prognosis is not so hopeful and the benefit derived, if any, is not likely to be of very long duration.

GENERAL DISEASES.

Exophthalmic goitre.—Few patients suffering from this disease have as yet been treated at the Institute, but the results obtained are sufficient to justify a trial of radium when other treatments have failed to produce any result. Prolonged exposures of 30 or more hours' duration in all should be given, with heavily screened apparatus containing 200 or 300 mgm. of radium, the apparatus being so disposed as to cover as much as possible of the gland surface. Three or four weeks usually elapse before any effect is appreciable, but from that time on a gradual diminution in the size of the gland, with slowing of the heart's action, lessening of tremor and of the degree of proptosis, may be looked for. The series of exposures should be repeated at intervals of three or four months.

Arthritis deformans.—The daily administration of 250 c.c. of radium emanation solution of a strength of not less than 1 millicurie per litre to patients suffering from this obstinate, painful, and crippling disease is sometimes attended by very remarkable results. It is difficult to predict with certainty as to the degree of improvement likely to occur in any particular instance, but the cases which appear to derive most benefit are those in which the disease is of relatively short duration, and the changes are periarticular in type, and multiarticular in distribution. The age of the patient also exerts some influence, those under 40 responding more quickly to the action of the emanation. Cases with a definite gouty history sometimes experience an acute exacerbation of all their symptoms within the first week or ten days of their treatment, but this disturbance is quite a transient one, and is usually followed by a distinct change for the better. Little or no improvement can be looked for in instances where cartilaginous or osseous changes are predominant, and the radium emanation solution is powerless to bring about the absorption of osteophytic growths or the loosening of fibrous or bony ankylosis. When limitation of movement is due to periarticular fibrous thickening, considerable increase of mobility often follows on the taking of the radium water and enables patients to perform actions such as feeding themselves, brushing their hair, shaving, &c., which they may have been powerless to do for some months or even years.

Other favourable effects of the treatment are the lessening or disappearance of the muscular and articular pains, the grating of the joints on movement is not so marked, the muscles regain much of their lost tone, and the patient's general health is much improved. This is especially noticeable when the patients are suffering from anæmia, their hæmoglobin index being rapidly increased.

Much research work has yet to be undertaken to enable an accurate opinion to be formed of the manner in which radium emanation solution produces these results, as its action appears to be a multiple and highly complex one, but the reinforcing of the body ferments, the increase of tissue oxidation, and the dissolving of uric acid are undoubtedly factors which contribute to its success.

I desire to express my indebtedness to my assistants, Dr. J. E. A. Lynham and Dr. A. Burrows, for the valuable help they have given in the compilation of this report. The opinions recorded are the result of our joint observations, as treatment has in many instances been planned and carried out entirely by them.

APPENDIX.

Report of the Chemico-Physical Laboratory, by W. L. S. ALTON, *F.I.C.* (*Director*).

Since the publication of the last report the laboratory staff has been almost wholly engaged in attending to an ever-increasing demand for emanation applicators and for radio-active water.

Emanation applicators.—These applicators have a very great advantage over applicators containing fixed radium salts, inasmuch as it is possible to concentrate the activity per unit area to a very high degree. Since the emanation in equilibrium with 1 grm. of metallic radium only occupies a volume of 0·59 c.mm., it is easy to see what advantages can be obtained by the saving of space compared with the relatively bulky radium salt. For example, the tubes containing 100 mgm. of radium bromide used in the Institute measure 40 mm. long and 2·2 mm. diameter, while it is quite easy to make an emanation tube equal in activity to them but measuring only 6 mm. long and 1·3 mm. diameter. Improvements in the construction of the apparatus used have resulted in the production of these emanation tubes of very small calibre, the latest achievement being the charging of iridium-pointed platinum needles (3 cm. long, 2 mm. diameter, and 0·3 mm. thickness) with emanation in capillary glass tubes for the insertion into malignant tissue. These needles, the suggestion of the medical staff of the Institute, appear to be easy to use, and if certain principles are observed are not difficult to fill with emanation.

The larger emanation tubes have been standardised in dimensions—that is to say, they have been constructed to fit certain standard screens. These screens are of the following dimensions: an "A" screen is 2 cm. long, a "B" screen 3 cm., and a "C" screen 4 cm., all of them with an internal diameter of 2 mm. The screens vary both as to material (lead or silver) and as to thickness of wall, thus giving considerable latitude in the treatment of special cases.

With the improvement of the apparatus the rate of production of these tubes has enormously increased; two tubes

are frequently made at the same time from one piece of capillary tubing, and are separated by means of a mouth blow-pipe, a constriction being made in the middle of the tube before the introduction of the gas.

It has been urged against the use of emanation tubes that their initial activity, which is often considerable, is rapidly lost, and that their residual activity, which is small in amount but of long duration, cannot be made use of. The answer to the first point is that a treatment rarely exceeds 24 hours, and that an emanation tube can so be made that its average strength during that period shall be the strength required (the loss during 24 hours being only 16 per cent). As regards the second point, when emanation applicators are returned after use to the laboratory they frequently possess considerable residual activity. As a rule the individual tubes are no longer sufficiently powerful to be of any therapeutic value, but an apparatus has been devised whereby the tubes are crushed and the emanation extracted, several tubes of low activity being utilised to make a tube of high activity.

The stock of radium salts available for emanation production has been subdivided for the sake of safety into units each of about 200 mgm. of radium bromide. Each unit has been attached to its own pump and has been mounted separately on the walls of the iron safes in the basement. All the pumps and glasswork have been made by the laboratory staff, considerable time having been spent in their construction. During the year 241 emanation tubes and applicators have been made (as compared with 44 in 1912), and the activity of these applicators was equal to that of over 19 grm. of radium bromide. These applicators were sent by post as required to various places in the British Isles.

Radio-active water.—The output of radio-active water has also been largely increased during the year, over 3600 litres being made in 1913, as compared with 400 litres in 1912. New apparatus has been constructed which permits of 150 bottles being despatched daily by post to patients as directed by their medical attendants. The strength of the water remains the same as for last year—that is to say, approximately 1 millicurie per litre.[1] The emanation used for the production of this large volume of water is equal in activity to about 6·5 grm. of radium bromide.

Radium applicators.—During the year there has been a considerable demand by medical men and by other institutes for the preparation of radium applicators similar to those used in the Institute. Applicators have been prepared for several of the London hospitals as well as for institutes in Germany and Denmark. The number of these amounts to 55 (as compared with 4 made in 1912). In addition 15 specimens of radio-active material were received from various sources for analysis, a branch of the laboratory work which shows signs of increasing since the acquisition of an International standard.

[1] A millicurie of emanation is equivalent to 2,670,000 Maché units.

ROYAL SANITARY INSTITUTE.—The Earl of Plymouth (President) occupied the chair at the dinner of the Royal Sanitary Institute held at the Langham Hotel, London, on May 13th. Amongst those present were Sir Thomas Barlow, President of the Royal College of Physicians of London, Sir Rickman J. Godlee, President of the Royal College of Surgeons of England, Sir Shirley F. Murphy, Professor Sheridan Delépine, Mr. Herbert Jones, Colonel J. Lane Notter, R.A.M.C., Dr. Arthur Newsholme, Surgeon-General Sir Lionel Spencer, Professor H. R. Kenwood, Dr. Louis C. Parkes, Dr. W. J. Howarth, Dr. E. F. Bashford, Professor Bostock Hill, and Mr. A. Wynter Blyth. After the usual loyal toasts had been honoured the toast of "The Royal Sanitary Institute" was proposed by the President, who pointed out that the institute was obtaining support from the most distant parts of the Empire. Sir Henry Tanner, chairman of the council, replied. The health of the visitors was proposed by Mr. H. Percy Boulnois, M.I.C.E., and Sir Thomas Barlow and Principal E. H. Griffiths, F.R.S., of the University College of South Wales and Monmouthshire, responded. The health of the chairman was proposed by Colonel Notter, and Lord Plymouth made suitable acknowledgment.

THE DIAGNOSIS OF PULMONARY TUBERCULOSIS:

THE VALUE OF BESREDKA'S ANTIGEN IN THE COMPLEMENT-FIXATION TEST FOR TUBERCULOUS DISEASE.

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IN May, 1913, M. Besredka, of the Pasteur Institute, in Paris, asked me to undertake some observations on patients suffering from pulmonary tuberculosis with a view to determining the diagnostic value of the complement-fixation test of the blood in the presence of a tubercle antigen prepared by himself. For this purpose he kindly supplied me with a quantity of antigen which is prepared by growing tubercle bacilli in a liquid medium consisting of veal broth and the white and yellow of the hen's egg. No peptone, glycerine, or salts are employed. After the growth has proceeded for from three to four weeks the culture is heated to 115° C., filtered free from bacteria, and should contain sufficient tuberculin to kill a tuberculous guinea-pig in a dose of 1·5 c.c. to 2 c.c.

The technique employed in the series of experiments referred to in the present communication needs description. In the complement-fixation test the following reagents are required: antigen, control and test human sera, complement, specific hæmolytic amboceptor, the corresponding erythrocytes, and physiological salt solution.

1. *The antigen.*—This was received direct from Paris in hermetically sealed stout-walled test-tubes and placed in the ice safe until required for use. Immediately before each experiment the required amount was decanted into a measuring flask and 1/20 c.c. of a 15 per cent. solution of pure crystallised sodium chloride for every 1 c.c. of antigen was added. The mixture was well shaken and poured into test-tubes. After a series of trials the dose of antigen for each tube was fixed at 0·3 c.c.

2. *The human serum.*—10 c.c. of blood were removed from the median basilic vein by venepuncture. The serum was always inactivated at 55° to 56° C. for 30 minutes. The blood was examined within 48 hours of withdrawal. The dose of serum was fixed at 0·2 c.c. for each tube. In the majority of experiments progressive dilutions of the serum were examined, as will be shown later.

3. *Complement.*—Fresh guinea-pig blood was used. Immediately after withdrawal clotting was allowed to take place in the air incubator at 37° C. for one hour. The clot was then freed from the walls and the tube placed on ice until required for immediate use. A 1 in 30 dilution of the clear serum was used in a dose fixed by titration in the presence of antigen and normal serum. The adequate dose was usually found to be 0·5 c.c. or even 0·4 c.c., rarely 0·6 c.c.

4. *Specific hæmolytic amboceptor.*—A rabbit-sheep hæmolysin was used. This was obtained already standardised from the Sächsisches Serumwerk und Institut für Bakteriotherapie, Dresden, and gave uniformly satisfactory results. The dose used was four to five times the minimal hæmolytic dose.

5. *The test erythrocytes.*—The corpuscles contained in 5 c.c. of fresh whipped sheep's blood were washed at least three times and suspended in 95 c.c. of physiological salt solution. The corpuscles were

sensitised 20 minutes previous to use, and the dose for each tube was fixed at 0·3 c.c.

6. *Physiological salt solution.*—0·85 gramme of pure crystalline sodium chloride was dissolved in 99·15 c.c. freshly distilled water, the solution being newly prepared for each experiment.

The Complement-fixation Test.

A preliminary series of bloods were examined as follows:—The complement 1 in 30 was titrated in the presence of antigen and a known normal serum in doses 0·2, 0·3, 0·4, 0·5, 0·6, 0·7, 0·8 c.c. The hæmolytic dose having been established, four tubes were arranged for each blood and received the reagents as shown in Table I.

TABLE I.

Tube number.	Antigen.	Inactivated serum.	Complement (1 in 30).	0·85% NaCl.	Sensitised sheep's corpuscles.
	c.c.	c.c.	c.c.	c.c.	c.c.
1	0·3	0·2	0·5*	0·3	0·3
2	0·3	0·2	0·6	0·2	0·3
3	0·3	0·2	0·7	0·1	0·3
4	0·3	0·2	0·8	—	0·3
	Contact for one hour at laboratory temperature and one hour 37° C. in air incubator.				
	Contact for half an hour at 37° C. in air incubator.				

* Minimal hæmolytic dose.

The tubes were then placed in the ice safe overnight and the results read off on the following morning. Of 52 sera obtained from patients suffering from pulmonary tuberculosis with tubercle bacilli present in the sputum, 50 cases gave a positive reaction, and 2 cases a negative reaction. At this point I had the advantage of discussing my results with Professor Georges Dreyer, and he advised me to make quantitative examinations of the blood by progressively diluting the serum whilst keeping the other reagents constant. By trial and error the following technique was found to be most suitable for the purpose, and it was thus that the remaining 286 cases referred to in this communication were examined:—

TABLE II.

Tube number.	Antigen.	Inactivated serum.	Complement (1 in 30).	Sensitised sheep's corpuscles.
	c.c.	c.c.	c.c.	c.c.
1	0·3	0·2 undiluted.	0·5*	0·3
2	0·3	0·2 diluted 1 in 2.	0·5	0·3
3	0·3	0·2 „ 1 in 4.	0·5	0·3
4	0·3	0·2 „ 1 in 8.	0·5	0·3
5	0·3	0·2 „ 1 in 16.	0·5	0·3
6	0·3	0·2 „ 1 in 32.	0·5	0·3
7	0·3	0·2 „ 1 in 64.	0·5	0·3
8	0·3	0·2 „ 1 in 128.	0·5	0·3
9	0·3	0·2 „ 1 in 256.	0·5	0·3
	Contact for an hour at 37° C. in water bath.			
	Contact for half an hour at 37° C. in water bath.			

* Dose determined by titration in presence of antigen and known negative serums.

The results obtained may be conveniently given in tabular form. Table III. summarises the findings gained from single examinations in 100 cases of pulmonary tuberculosis, having tubercle bacilli present in the sputum at the time of the blood examination, and chosen at random from the in-patients at the hospital.

TABLE III.

1. Hæmolysis with serum undiluted...	5 = 5 per cent. negative.		
2. „ „ „ diluted ½ ...	5		
3. „ „ „ „ ¼ ...	7		
4. „ „ „ „ ⅛ ...	16	... ...	
5. „ „ „ „ 1/16 ...	19	95% positive.	83% positive.
6. „ „ „ „ 1/32 ...	22		
7. „ „ „ „ 1/64 ...	14	... ...	... ... 48% positive.
8. „ „ „ „ 1/128 ...	10	... ...	... ...
9. „ „ „ „ 1/256 ...	2	... ...	... ...
	100		

Of the five negative cases three were "resting febrile," one "ambulant febrile," and one "ambulant afebrile." In all five cases the duration of the disease was under one year. Subsequent re-examination of these cases gave a positive reaction in four, whilst one of them remained negative.

Table IV. deals with the strength of the reaction

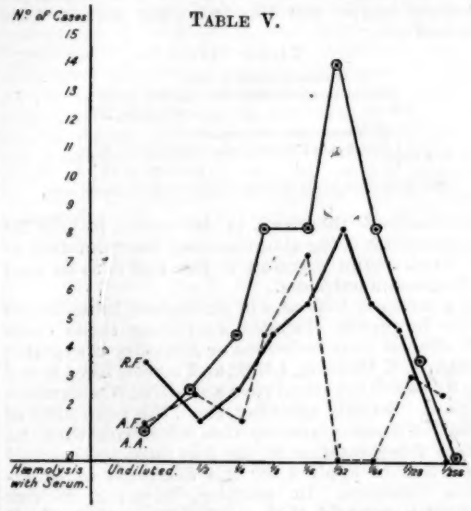
TABLE IV.

Hæmolysis with serum—	Duration of disease.			
	1 month–12 months.	1 year–3 years.	3 years–5 years.	Over 5 years.
Undiluted	5	0	0	0
Diluted 1 in 2... ...	5	0	0	1
„ 1 in 4... ...	5	0	1	0
„ 1 in 8... ...	6	8	0	2
„ 1 in 16 ...	11	5	2	2
„ 1 in 32 ...	12	6	1	2
„ 1 in 64 ...	9	4	0	0
„ 1 in 128 ...	5	4	2	0
„ 1 in 256 ...	1	1	0	0
Total	59	28	6	7

in relation to the duration of the disease, and is self-explanatory.

Table V. graphically represents the frequency of

TABLE V.



R.F., Resting febrile (32 cases). A.F., Ambulant febrile (20 cases). A.A., Ambulant afebrile (48 cases).

strong and weak reactions in febrile and afebrile cases. It also is self-explanatory.

For controls reliance had to be placed on bloods obtained from patients admitted to general hospitals in London suffering from diseases presumably other than tuberculosis. Manifest sources of error creep in here. Firstly, cases admitted for the treatment of traumatic, infective, or neoplastic diseases, or of diseases anatomically defective in origin, are not minutely examined for evidence of tuberculous infection. Secondly, in many of the cases here dealt with a special examination with a view to determining the presence or absence of active tuberculous infection was impossible. Thirdly, tuberculous infection, at all events of a transient nature and of such a degree of activity as only to be detected with difficulty, is common amongst the hospital classes of the population of the country. Such evidence as is to hand tends to show that the number of positive reactions would be considerably diminished were a series of healthy adults drawn from the same social status to act as controls.

TABLE VI.

1.	Hæmolysis with serum	undiluted	...	76	= 76% negative.	
2.	,, ,, ,,	diluted 1/2	...	7	24% positive.	
3.	,, ,, ,,	,, 1/4	...	8		
4.	,, ,, ,,	,, 1/8	...	5		
5.	,, ,, ,,	,, 1/16	...	4		
6.	,, ,, ,,	,, 1/32	...	0	... ...	0% positive.
7.	,, ,, ,,	,, 1/64	...	0	... ...	
8.	,, ,, ,,	,, 1/128	...	0	... ...	
				100		

Table VI. gives the results obtained, and is valuable in that it shows that no positive reactions were obtained with a 32-fold dilution of the serum, whilst reference to Table III. shows that nearly one-half of the certainly active cases of pulmonary tuberculosis give a positive reaction with the serum thus diluted.

The composition of the antigen suggested the possibility of a positive reaction being obtained in cases of syphilitic infection. Indeed, this proved to be the case. Samples of serum examined by independent observers at several London hospitals were investigated according to the technique described above, and the following results were obtained:—

TABLE VII.

1 ...	15 Wassermann negative sera.		
	Complement-fixation test	negative in	13
	,, ,,	positive in	2*
2 ...	21 Wassermann positive sera.		
	Complement-fixation test	negative in	0
	,, ,,	positive in	21

* The clinical diagnosis was not inquired into in these cases.

It remained, therefore, to determine in how far this necessitates the simultaneous determination of the Wassermann reaction if the test is to be used for diagnostic purposes.

In a series of 158 cases of pulmonary tuberculosis at the Brompton Hospital, excluding those cases with clinical manifestations or a history of syphilis, Captain A. N. Dickson, I.M.S., and myself have found that 8 cases (5 per cent.) gave a positive Wassermann reaction. Strictly speaking, then, the possibility of a positive Wassermann reaction interfering with the correct interpretation of the test must be excluded if the test be applied for the diagnosis of tuberculous infection. In practice, however, it can hardly be gainsaid that such a precaution, at all events in reasonably selected cases, need not be seriously considered so long as the contingency is borne in mind.

Fifty cases were examined because the diagnosis of active tuberculosis was uncertain. It must be understood that the positive diagnosis in these cases may have been probable or improbable; the sole reason for their investigation was the absence of tubercle bacilli from the sputum. Table VIII. summarises the results obtained.

TABLE VIII.

1.	Hæmolysis with serum	undiluted	20	= 40% negative.	
2.	,, ,, ,,	diluted 1/2	4	60% positive.	
3.	,, ,, ,,	,, 1/4	10		
4.	,, ,, ,,	,, 1/8	7		
5.	,, ,, ,,	,, 1/16	3		
6.	,, ,, ,,	,, 1/32	1		
7.	,, ,, ,,	,, 1/64	3		
8.	,, ,, ,,	,, 1/128	2		

It is suggestive that these figures almost exactly coincide with those obtained in a similar class of case investigated by means of the tuberculo-opsonic index test.

Exercise produces no immediate quantitative effect upon the antihæmolytic power of tuberculous serum as the following experiment shows:—

TABLE IX.

Case.	Hæmolysis with inactivated serum.								Tuberculo-opsonic index.	
	Undiluted.	1/2	1/4	1/8	1/16	1/32	1/64	1/128	Active serum.	Heated serum.
1.—At rest	0	0	+	C	C	C	C	C	0·78	0·16
After 1½ miles' walk	0	0	+	C	C	C	C	C	1·00	0·47
2.—At rest	0	0	0	0	0	+	C	C	0·88	0·32
After 3 miles' walk	0	0	0	0	0	+	C	C	0·68	0·28
3.—At rest	0	0	+	C	C	C	C	C	1·04	0·12
After 1 mile walk	0	0	+	C	C	C	C	C	1·00	0·06

0 = no hæmolysis. + = partial hæmolysis. C = complete hæmolysis.

Conclusions.

1. The antihæmolytic power of tuberculous serum can be made manifest in a hæmolytic experiment by introducing Besredka's antigen into the mixture.

2. Repeated positive reactions, especially with a 32-fold serum dilution, in the absence of a positive Wassermann reaction, indicate the presence of an active tuberculous lesion.

3. Repeated negative reactions indicate the absence of an active tuberculous lesion, if cases of under 12 months' duration be excepted.

A word of thanks is due to those who have helped in the accumulation of material for this research. To those physicians at Brompton Hospital who so unreservedly placed cases under their charge at my disposal, to Dr. Arthur Latham, Dr. J. W. Linnell, Dr. D. Embleton, Dr. A. Paine, Dr. A. Leitch, Mr. E. A. Tozer, Dr. H. A. Treadgold, and Dr. W. P. Johnston I express my gratitude. To Professor Georges Dreyer I owe an especial debt of gratitude for friendly criticism and advice. To M. Besredka I extend my thanks with the wish that his labours in the interest of suffering mankind may meet with the success they deserve.

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REMARKS ON THE SO-CALLED RE-EDUCATION OF THE DEAF.

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FOR many years there have been before the public and the profession various mechanical contrivances which have been recommended for the so-called re-education of the deaf, and also for the education of the congenitally deaf, the contention being that it was possible materially to improve the hearing in those who were suffering from acquired deafness, as one already knew that it was frequently possible to stimulate or educate the hearing of those congenitally deaf. For a considerable time the use of instruments was confined to a few aurists in Paris and Vienna, some of these gentlemen claiming very wonderful results. As was quite natural these claims became known to the British public, and one was constantly finding inquiries directed towards the subject of sound re-education of the deaf by one's patients, and at the same time one not infrequently heard stories of very wonderful recoveries. Within the last few years mechanical engineers of considerable ability, seeing the large amount of money that was to be made by acting as unqualified re-educators of the deaf, produced clever sound-producing instruments and started in the business, and now flood the land with pamphlets, and by all accounts have a very large following. I have seen, I must admit, a large number of people at one time or another who have been to them, but so far I have personally observed no good results from the treatment. And, indeed, as will appear by what I shall say presently, I should have been astonished if I had.

Some years since I purchased an instrument designed for the relief by re-education of the deaf, having been very favourably impressed by the improvement that had been derived by one of my patients from this treatment, an instrument in which the sound-producing force was air; the treatment was carried out by Dr. Marage. I have treated during the last two years for a greater or less time somewhere about 20 cases, with an appallingly small amount of success. It may be that it was because the cases so treated were almost without exception cases which had refused to yield in any way to my ordinary methods of treatment, either cases of advanced progressive middle-ear deafness or otosclerosis, with a few nerve cases. Only one case appeared materially benefited, and that lady was of a very nervous temperament. I have therefore come to the conclusion that in cases of acquired deafness this method of treatment is not to be recommended, and that it rarely offers further hope for those patients whose deafness does not yield to properly and judiciously applied remedies.

There is, however, an obverse of this, and that is the use of mechanical educational methods in the treatment of the congenitally deaf, and it is pleasing to be able to say that at any rate one variety of one re-educational instrument (perhaps others) is of great benefit in stimulating the dormant power of hearing in this class of patient. But it must also be understood from the beginning that the appreciation of sound by the deaf-mute can only be of value when correct instruction is given to the child in the appreciation of sound pitch and so on. Besides the boy whom I showed at the Otological Section of the Royal Society of Medicine on February 20th of this year I have a little girl patient of nearly the same age who has made very marked improvement, though not so great as the boy. At the end of a twelvemonth's intermittent treatment, the former is now able to hear and comprehend most words which are spoken to him in a distinct voice into the concha, whereas the little girl is somewhat behind this, yet her progress is very remarkable. A third case I have treated was a boy very much older, who has just become an apprentice, and who has six weeks' treatment once or twice a year. Everybody has been struck by the great improvement in his vocalisation and hearing.

Another case was that of a young lady, aged 18, a congenital deaf-mute, who commenced to hear a little at about the age of 12, and when she came to me was able to hear a loud voice at about 3 inches from her right ear. I gave her four weeks' treatment at mechanical re-education, and at the end of the four weeks she was able to hear on the right side words spoken in an ordinary voice over 3 feet away. None of these patients had ever been treated with the method of Urbantschitsch, so one is unable to say whether mechanical treatment would succeed where vocal treatment failed.

Educational treatment of the congenitally deaf must be considered from a totally different standpoint from the re-education of the sufferers from acquired deafness. This treatment is rational and by no means new. Itard was, as far as I know, the first to practise education of the congenitally deaf, and since that time very many attempts have been made, both by vocal stimulation of the auditory nerve and by mechanical stimulation, to rouse and bring out, as it were, the dormant power of hearing possessed by many congenitally deaf children and even adults. Urbantschitsch was one of the modern pioneers of these endeavours to ameliorate the condition of these unfortunate people.

One asks oneself how is it that in some instances children born without any sense of hearing have been known to acquire, usually in late childhood, without any artificial nerve stimulus, a certain amount of hearing. The only feasible explanation is that the connecting tract between the nerve centres, and therefore the perception and interpretation of sound, is delayed in its development. Whatever the interpretation may be, there is no doubt that there are analogous instances in at least one or two of the special senses, and there are many minor ones in the auditory nerve, such as tone deafness and inability to copy certain sounds; this is especially marked in the aspirates, which may, and often does, persist through life, but which may entirely be eliminated by tuition.

These cases of delayed auditory perception have been made use of to show miraculous cures by means of these hearing appliances. In the class of case to which I am referring the connexion between the centres is already made, and it only requires a little practice or use to give the recognised acquaintance, both conscious and subconscious, with the altered conditions. But there exists, no doubt, a very large number of people who are born deaf, and who never in the ordinary way develop any hearing power, but in whom it is possible to develop this power if proper steps are taken. In fact, we may classify congenital deaf-mutes under (*a*) those with demonstrable rudimentary power of hearing, and (*b*) those with no apparent hearing. Of these congenital deaf-mutes

the first are all potential hearers; the second, however, certainly contain an unknown proportion of non-potential hearers. The class of case in which one can demonstrate a rudimentary power of hearing is relatively small, and the amount of hearing that these persons possess is often restricted to a single note.

The great drawback to educational treatment by means of mechanical appliances is the length of time over which the treatment has to extend and the consequent great expense entailed. For it is quite certain that one must at times be prepared to work for somewhere about three months even if no result is appreciable earlier; the two children under my care, as I have already mentioned, have now had considerably over a year's treatment.

If these congenitally deaf patients do not acquire a sufficient amount of auditory perception and acuity to enable their hearing to be of definite use in daily life, yet it is of immense value as enabling them to acquire a proper or better pronunciation, or one might say an intelligible pronunciation. It enables them to acquire a voice free from the monotone of the ordinary deaf-mute, though it is true this latter has apparently been obtained without the benefit of any auditory perception on the part of the patient. Still, it must be infinitely harder to teach a patient without auditory perception and must take a far greater time.

Briefly summarised, my view with regard to the instrumental re-education of the deaf is that it is almost useless in acquired deafness of adults. It is most useful in congenital deafness, even should this be total, and it is also of value in acquired deafness of childhood when this is not due to any destructive lesion of the internal ear.

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A CONTRIBUTION TO THE KNOWLEDGE OF EXPERIMENTAL NEPHRITIS.

BY HORST OERTEL, M.D.

(From the Gordon Pathological Laboratory of Guy's Hospital, London.)

UNTIL quite recently the opinion prevailed that the action of certain poisons on the kidney was selective. It was supposed that some, like cantharidin, injured almost exclusively the vascular system and therefore produced a vascular nephritis; others, like chromium, bichloride of mercury, and uranium nitrate, destroyed the secretory tubular cells, leaving the blood-vessels and glomeruli untouched, and therefore produced tubular nephritis. It became, then, common to differentiate between vascular and tubular nephritis as rather distinct affections, and this in spite of well-founded evidence to the contrary.

In 1904 Lyon, in an important contribution[1] which has not received the general recognition and appreciation it deserved, showed clearly from his own experiments and the investigations of others that in cantharidin poisoning there occur not only vascular injury and reaction, but a diffuse necrosis of the secretory tubular cells, and that in poisoning by bichloride of mercury glomerular lesions may also be present. Similar results have been obtained by subsequent investigators for these and still other types of experimental nephritis. Thus Pearce, for example, found the evidences of tubular injury and reaction in cantharidin nephritis,[2] and Christian and O'Hare[3] have described various glomerular lesions in uranium nephritis. I have further emphasised on various occasions that, as far as the human kidney is concerned, a distinction between vascular glomerulo-nephritis and tubular nephritis is not justifiable.[4]

While these investigations have considerably modified the former conception of a strict division between vascular and tubular nephritis, the idea still remains that in some types of nephritis the involvement of one or the other renal structure is greater, and therefore dominates in the effects on resulting functional disturbances. There is hardly any other idea which is more indiscriminately used and has done so much harm in the formation of correct pathological conceptions. For it is in fact extremely unsafe to judge the severity of functional disturbances by the relative ease with which morphological changes may be detected, or to use mere quantitative measures as an absolute index of functional disturbances. Pearce and Eisenbrey,[5] for example, demonstrated that nephrotoxic and hæmolytic immune sera cause changes which by physiological methods present no evidences of vascular injury, but which are anatomically characterised by exudative glomerular lesions of moderate severity. In arsenic poisoning, on the other hand, physiological methods show profound vascular changes, but the anatomical investigation shows little or no vascular lesion. A simple observation will further convince one in that respect: cantharidin produces morphologically an impressive exudative nephritis with an abundant emigration of leucocytes, diapedesis of red cells, and frequent hæmorrhages; uranium nitrate, on the other hand, produces usually only serous exudation, no emigration of leucocytes, and rarely small and limited hæmorrhages. Still in these, apparently milder, less severe vascular lesions the amount of serum albumin (coagulable by heat) in the urine is as great as, sometimes greater than, in the apparently more severe cantharidin nephritis. The injury to the vessels in uranium nephritis, therefore, must be quite pronounced. This is borne out by a careful morphological investigation, for, while an impressive emigration of leucocytes is absent, we find an unusually large quantity of serous exudate. We are dealing in such cases with still unknown qualitative disturbances which are, although more difficult of detection, of importance in altering the constitution of tissues.

Indeed, Aschoff's and Suzuki's[6] extensive work has shown in regard to the secretory tubular cells that the character of degeneration differs for various poisons, and that these differences may have an effect on accompanying functional changes. They deserve, therefore, a closer study than has until now been accorded to them. Aschoff and Suzuki find that, for example, uranium and mercury produce necrosis of cells associated with a dropsical hyaline degeneration; cantharidin, on the other hand, necrosis with marked swelling and vacuolisation of the cells. They come to the conclusion that *all* poisons act primarily on the parenchyma—that is, the different parts of the convoluted tubules; and further, that the differences in functional disturbances, which have lately been the source of much experimentation and discussion, must rather be attributed to individual differences and complexity in the topographical action of poisons and their varying effects on blood pressure, and not to injury of specific kidney constituents.

Without going into a full discussion of this matter again, I may add that I have recently been able in the course of some experiments to convince myself that, at least as far as cantharidin, chromium, bichloride of mercury, and uranium nitrate are concerned, there occurs primarily parenchymatous degeneration of the tubular cells which is most marked in the convoluted portions. In cantharidin nephritis particularly this is, even with small and moderate doses, extremely severe, leading to early necrosis of these cells, even before an exudation in glomeruli is visible. For this reason the fatty changes in cantharidin poisoning are probably less conspicuous than after bichloride of mercury and, under certain conditions, in uranium nitrate, in which the parenchymatous destruction appears to proceed less violently.

It should further be noted that these kidney poisons involve early the vascular system in an exudative process. In chromium, mercury, and uranium nephritis this is mainly of a serous character, while in cantharidin it is associated with marked emigration of leucocytes. These are constant results, but others may at times be noted, such as hyaline thrombi or hæmorrhages in the glomeruli and hæmorrhages in the tubules. A noticeable output of serum albumin and the formation of casts are therefore features of all cases of experimental nephritis. Differences in these results are individual rather than specific. There is, however, still another important complication of experimental nephritis that undoubtedly enters into the functional changes which have been observed by various investigators and which have been interpreted by some as an index of the type of renal injury—namely, the results of metabolic disturbances which follow the general effects of poisons on the organism. For it is evident that functional disturbances of renal activity may not only arise within but outside of the kidney. This consideration has until quite lately been disregarded, and we know very little about the changes which these poisons produce in other organs, notably the liver, which as the largest metabolic gland demands first importance.

In a recent contribution Opie[7] has offered some interesting information in this respect. His attention was attracted by the occurrence of œdema of the liver and gall-bladder in cantharidin nephritis, which suggested to him the possibility that changes in the liver may have a part in the functional disturbances which accompany this nephritis. His investigations showed that cantharidin exerts a decided influence on the lymph flow of the liver which is associated with definite structural changes. In observing these changes for several hours after the administration of cantharidin, he found at first a short period of retardation of lymph flow from the liver, later, however, a decided rise. Macroscopically the liver became turgid, homogeneously deep red, without lobular markings, and blood escaped in great abundance from the cut surfaces. Microscopically such livers showed an accumulation of lymph containing red blood cells in the dilated lymph vessels. Similar pictures were presented by the regional lymph glands, which also showed the presence of polymorphonuclear leucocytes.

I have lately carried on an investigation into the structural changes which cantharidin, bichloride of mercury, and uranium nitrate produce in the liver of rabbits. Fifteen animals were employed. Of these 7 were poisoned with varying doses of cantharidin of a strength usually employed in the study of experimental nephritis, 4 were in similar fashion poisoned with bichloride of mercury, and 4 with uranium nitrate. The changes were noted at various times after administration, as seen by the following tabulation, which is arranged according to dosage and length of time the animals lived after poisoning. It should be emphasised that these investigations were not conducted to determine the poisonous properties of definite doses of the respective drugs *per se*, but rather whether doses usually employed and sufficient for the production of nephritis had any effect on the liver. In all cases the presence and the features of nephritis were therefore noted and compared with the liver lesions.

Cantharidin.

Rabbit 1; 2050 grm. Dec. 11th, 1913, ½ c.c. of 1 per cent. cantharidin in acetic ether at 11.45 A.M. Killed at 4.45 P.M.

Rabbit 2; 2020 grm. Nov. 24th, 1913, ½ c.c. of 1 per cent. cantharidin in acetic ether at 3.15 P.M. Died during night.

Rabbit 3; 1700 grm. Dec. 11th, 1913, ½ c.c. of 1 per cent. cantharidin in acetic ether at 11.45 A.M. Died during night.

Rabbit 4; 2520 grm. Nov. 24th, 1913, ½ c.c. of 1 per cent. cantharidin in acetic ether at 3.15 P.M. Lived to the morning of Nov. 28th.

Rabbit 5; 1470 grm. Nov. 18th, 1913, ½ c.c. of 1 per cent. cantharidin in acetic ether at 2.40 P.M. Died during night.

Rabbit 6; 2070 grm. Ditto (as No. 5).

Rabbit 7; 2000 grm. Feb. 10th, 1914, ½ c.c. of 1 per cent. cantharidin in acetic ether at 3 P.M. Died during night.

Mercury.

Rabbit 8; 1820 grm. Jan. 21st, 1914, 1 c.c. of 1 per cent. mercuric bichloride at 2.45 P.M. Killed on Jan. 22nd at 9 A.M.

Rabbit 9; 1950 grm. Jan. 12th, 1914, 1 c.c. of 1 per cent. mercuric bichloride at 2.45 P.M.; repeated on Jan. 13th at 2.40 P.M. Killed on Jan. 14th at 1 P.M.

Rabbit 10; 1850 grm. Jan. 12th, 1914, 1 c.c. of 1 per cent. mercuric bichloride at 2.45 P.M.; repeated on Jan. 13th at 2.40 P.M. Killed on Feb. 9th at 5 P.M.

Rabbit 11; 1870 grm. Jan. 21st, 1914, 1 c.c. of 1 per cent. mercuric bichloride at 2 45 P.M. Jan. 22nd 2 c.c. of mercuric bichloride at 2.30 P.M. Repeated on Jan. 23rd at 2.30 P.M. Died during the night following Jan. 24th.

Uranium.

Rabbit 12; 1270 grm. Feb. 23rd, 1914, 1 c.c. of 2 per cent. solution of uranium nitrate at 3 P.M. Killed on Feb. 24th at 3 P.M.

Rabbit 13; 1900 grm. Feb. 10th, 1914, 1 c.c. of 2 per cent. solution of uranium nitrate at 3 P.M. Repeated on Feb. 11th at 3 P.M. Killed on Feb. 12th.

Rabbit 14; 1420 grm. Ditto (as No. 13).

Rabbit 15; 3070 grm. March 25th, 1914, 2 c.c. of 2 per cent. uranium nitrate at 3.30 P.M. March 26th 3 P.M. 2 c.c. of uranium nitrate. Killed on March 27th at 3 P.M.

Cantharidin.

The investigations into the effects of cantharidin on the liver showed, in conformity with the observations of Opie, primarily a massive hæmorrhagic congestion and œdema of the liver which at the time when my observations commenced (five hours after administration) had already proceeded to exudation of leucocytes and were associated with marked parenchymatous destruction of liver cells. It is evident, therefore, that the œdema which Opie observed was inflammatory œdema, a view which is also supported by the admixture of red cells to the œdematous fluid in his cases and the presence of polymorphonuclear leucocytes in the similarly affected regional lymph glands. In all my cases there existed from the start marked engorgement of portal vessels with red blood cells and leucocytes. A similar engorgement occurred early in the central veins and the intralobular capillaries. Distinctly eosinophile leucocytes (which

always predominate in the rabbit) were scattered through the lobules.

In animals which survived a somewhat longer time, say through part of the night following the afternoon of the injection, these features had become accentuated, advanced, and certain other phenomena had appeared. The liver cells were actively proliferating, showed frequent mitosis, and many of the portal vessels were plugged by inflammatory thrombi. This led to peculiar pictures in some of the adjoining peripheral parts of lobules. Proliferating liver cells had been dislocated, isolated, and, mixing with inflammatory cells, formed rather independent, more or less sharply defined cell foci. Within such foci vessels and bile ducts were seen whose lining cells with their nuclei had fused to form giant cells. Destruction of liver cells throughout was severe and rapid. A large-drop fat infiltration was practically absent, but very fine fat droplets appeared within the protoplasm of disintegrating liver cells.

In one rabbit, which lived for about four days after poisoning, the lesion had undergone some recessions, so that its distribution through the liver appeared somewhat irregular, more localised, and less active. The swelling of the cloudy liver cells appeared generally greater, and was more conspicuous on account of lesser intralobular capillary engorgement. This allowed a better preservation of liver cell columns. Invasion of the lobules by leucocytes was very slight, in many fields absent, even near the portal spaces, so that throughout parenchymatous changes predominated. The nuclei of the liver cells were pale and large, and frequent amitotic and mitotic division occurred.

Mercury.

Schlayer and Hedinger employed a 1 per cent. solution of bichloride of mercury for the production of nephritis, which was administered in doses of ½ c.c. to 1 c.c. and repeated in 14, 19, and 55 hours. The susceptibility of rabbits to mercury is much less than to cantharidin, so that they survive even larger doses better than small doses of cantharidin.

The lesions produced in the liver by bichloride of mercury in a moderate small single dose—say 1 c.c. of a 1 per cent. solution—are after a period of about 18 hours pronounced but irregular parenchymatous degeneration with granular disintegration of the protoplasm most marked around the central vein. Associated is a prominent and diffuse large-drop fat infiltration. This fat is situated not so much in the cells as between them in the lymph and capillary spaces, which show a moderate and irregular but quite evident dilatation, which is also most conspicuous in the centre of the lobules. The disintegrating liver cells contain small fat drops within their degenerating protoplasm. The peripheral cells of the lobules are better preserved, although more or less swollen and cloudy. The portal spaces are intact except for engorgement of their blood vessels. Emigration of leucocytes is absent.

The changes after repeated moderate doses are somewhat more accentuated and modified. Parenchymatous swelling becomes more diffuse, and an œdematous imbibition and dissolution of the liver cells become pronounced, these changes being most advanced in the centre of the lobule. Such necrotic parts are therefore separated by better preserved areas. Fat is found in diffuse distribution, mostly in the form of large fat drops in the necrosing foci, but also in the connective tissue of the portal spaces.

Nuclei of liver cells are to a great extent in various stages of solution, but an abundance of deeply staining, richly chromatic, large nuclei are also seen, which impress one as of very recent origin. Dilatation of capillary vessels remains prominent in the central portions of the lobules and is most conspicuous in the necrosing areas.

On the whole the lesion is dominated, as will have been seen, by the impressive parenchymatous changes with œdema. Leucocytes are absent or present in insignificant number in the affected parts.

Finally, after repeated larger doses (1 c.c. of 1 per cent. bichloride of mercury, followed the next day by 2 c.c., and the day after by another 2 c.c.) one finds a generally quite marked necrotic dissolution of the central lobular cells around dilated central veins. The surrounding peripheral cells are swollen, cloudy, and fatty. Fat in the cells is visible in the form of fine, small drops, but fat is also carried by the larger portal vessels which not infrequently are the seat of hyaline thrombi. Such fat is carried along in the intralobular capillaries and is seen in intercellular spaces in form of small granules.

One of the rabbits after receiving two doses of 1 c.c. of 1 per cent. mercuric bichloride in an interval of one day was allowed to recover from the acute symptoms of the poisoning and to live for about a month. During that time the at first pronounced albuminuria gradually diminished to a faint trace, but the amount of urine became more concentrated and darker coloured. (Bile could not be demonstrated in it.) The animal, however, after a week began to lose weight very rapidly, although it continued to eat quite well. It lost thus from 1850 grm. to 1050 grm. in a month. At that time it was much emaciated and very weak, and was therefore killed.

The changes in the kidney bore a resemblance to those found in continued degenerative nephritis in man. The degeneration of the tubular cells was marked and general but not very violent, and seemed to consist to a great extent in an œdematous swelling associated with fatty changes. The latter were particularly marked in the straight and collecting tubules. These also contained a good number of hyaline casts. The nuclei of the lining cells were relatively well preserved but generally pale, and in the convoluted tubules poor in chromatin and often dissolving. The glomeruli were engorged, plump, œdematous, and the capillary loops individually obscured and adherent to each other, but not to the capsule. There remained, however, only a narrow capsular space as the glomeruli occupied most of it. Cell infiltration or increase was universally absent; neither glomeruli nor periglomerular nor intertubular tissue were increased in thickness or showed an appreciable number of new cells. The whole picture was then controlled by an apparently chronic œdematous imbibition and slow disintegration of parenchyma cells associated with fatty changes and œdema of the glomeruli.

The liver presented also a general swelling and œdematous solution of its cells, which was most pronounced around the engorged and dilated central veins, some of which contained hyaline thrombi. In advanced places this had proceeded to necrosis of liver cells. The arrangement into columns had thus been lost, but the liver cells were for the most part tightly packed without a definite arrangement. Only where a more extensive solution had taken place dilated and engorged capillaries were seen. The peripheral portions of the lobules were better preserved, but the vessels of the interlobular

spaces were engorged and the portal connective tissue showed œdematous swelling and turbidity. Cell infiltration or connective-tissue proliferation was absent, but there existed a rather diffuse small-drop fat infiltration mostly visible at the periphery of cells and, where intercellular spaces were visible, between them.

Uranium.

The changes in the liver after administration of uranium bear superficially a closer resemblance to those of mercury than to those produced by cantharidin, inasmuch as parenchymatous degenerations and a serous, not cellular, exudate dominate the picture. There exist, however, certain characteristic differences. In the liver, as in the kidney, the serous exudate is very abundant, so that the inflammatory œdema of the tissues is marked throughout. Consequently the œdematous swelling of the liver cells with subsequent cytolysis is pronounced and complete. These characteristics are noticeable even after relatively small doses (1 c.c. of a 2 per cent. solution). While in mercury poisoning the liver cells show generally prominent fatty degeneration and granular disintegration, uranium seems to produce a simpler œdematous dissolution of cells. Indeed, after larger doses fatty changes, which are present after small or moderate doses, become inconspicuous, probably on account of a more rapid solution of cells, and the enormously swollen, pale cells actually compress the intercellular blood and lymph vessels. They are aided in this by the inflammatory œdema, and in hardened sections coagulated lymph can sometimes be seen between cells. Under such conditions only narrow, short, thin streaks of fat are visible between necrosing cells. Proliferation of liver cells is, probably for the same reasons, practically absent. The central veins are dilated, filled with blood and at times with hyaline thrombi. Their walls are swollen and hazy. Lobular necrosis is most marked around them. Irregular capillary dilatation is present, more especially in wasted areas in which only necrotic cells remain.

Summary of Results.

It is evident from these experiments that definite lesions result in the liver after the administration of cantharidin, bichloride of mercury, and uranium nitrate. These bear a more or less close resemblance to the changes in the kidney. Shortly summarised, cantharidin produces a rapidly progressing and general parenchymatous degeneration, and necrosis associated almost from the beginning with tremendous hæmorrhagic vascular engorgement and cellular exudation. These lead, even in small and moderate doses, to a marked and rapid disorganisation of the liver. The accompanying constitutional symptoms are severe and lead to speedy death.

In mercury the picture is controlled by parenchymatous and fatty degenerations with which œdematous swelling is associated. These lead, according to dose and susceptibility of the animal, to rapid or retarded solution of the cell, especially in the central parts of the lobules. Somewhat similar to mercury are the changes brought about by uranium, but a much greater inflammatory œdema or serous exudate and a greater swelling, vacuolisation, and cytolysis of the parenchyma in kidney and liver distinguish it from mercury poisoning. The fatty changes are less marked than after mercury, due, in all probability, to the greater and more rapid œdematous dissolution of the cells. But in both lesions the central parts of the lobules are most severely involved.

The conclusion may therefore be drawn that cantharidin, mercury, and uranium are not selective poisons, that they affect not only the kidney but the liver, and that they involve in both organs parenchyma as well as circulatory system. Functional changes which have been observed in those instances cannot therefore be regarded as solely due to injury of one or the other part of the kidney, in fact not to the kidney alone, for the alterations in the liver make it probable that these changes are, at least partly, dependent upon metabolic disturbance by these poisons.

Pathological Changes in Liver of Untreated Rabbits.

Before closing, I may be allowed to add a few remarks about certain pathological changes which are frequently found in untreated rabbits, and which at times may become confusing in the investigations of experimental lesions. I will disregard the various parasitic diseases to which the rabbit is liable, because these are most always easy of interpretation. Of others, however, early or later evidences of portal sclerosis which must be the results of frequent vascular or bile duct infections may, particularly when recent and cellular, become a source of trouble in the study of experimental inflammatory changes in the liver. But these are practically always restricted to the periphery of the lobes in close continuity with the portal or bile-duct system and irregularly streaky in distribution.

In this connexion it must also be remembered that the majority of rabbit's leucocytes are, as pointed out by Price-Jones,[6] acidophile, so that the appearance of eosinophile leucocytes is no criterion of the recency of an inflammatory exudate as in man and some other animals. The liver of the rabbit presents, further, not uncommonly small granulomatous formations or pseudo-tubercles. However, most important and misleading are certain changes in the liver cells which occur in connexion with regenerative activities during recovery from spontaneous inflammatory or traumatic liver injury. Under such conditions appear closely packed clear cells without columnar arrangement, usually smaller than normal liver cells, but generally uniform in size. They resemble the lining cells of the collecting tubules in the kidney. Their nuclei are as a rule well preserved, appear at a glance in greater than normal number, and are, depending upon the stage and rapidity of regeneration, in various states of chromatin contents. Many are very rich in, and plump with, chromatin; intermingled with these are others poor in chromatin and even pale. It is not possible to decide whether these latter cells are very early forms of recovering cells, or new cells which gradually are lost during over-production of regeneration. They show sometimes a faint protoplasm. These cells might easily be taken for evidences of a more or less diffuse pathological cytolysis; they differ, however, from this, not only in a much more even distribution and regularity in their morphological appearance, the evident increase in number, their new arrangement, and the greater chromatin contents in many nuclei, but also in the absence of the characteristic irregular, sometimes tremendous, swelling with œdematous imbibition of the cells and the distinct evidences of progressing cytolysis to necrosis which, leaving only a hazy, swollen reticulum, allows a

gradual prominence and engorgement of intercellular capillaries with ultimate hæmorrhagic extravasation.

Care must therefore be exercised not to confound, on the one hand, the results of idiopathic infections with the results of experimental procedures, and, on the other hand, the evidences of liver regeneration, occasionally encountered in untreated rabbits, with normal conditions or related to normal liver function.

Many of these pictures were at first very confusing to me, and I owe their better understanding and knowledge to the opportunity offered to me by Dr. Gordon Goodhart, who allowed me a free study of his instructive collection of normal and abnormal rabbits' livers, notably those following trauma or ablation of part of the liver. I must also acknowledge my indebtedness to Dr. P. P. Laidlaw and Dr. R. A. Chisolm for many acts of kindness. To the latter I owe specimens for the study of chromium nephritis.

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OBSERVATIONS ON SYPHILIS OF THE CENTRAL NERVOUS SYSTEM, WITH A NOTE ON SALVARSAN.[1]

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FOR convenience in dealing with lesions of the central nervous system the body will be considered as consisting of two divisions: (*a*) that part which is bathed by blood—i.e., the systemic division; (*b*) that part which is bathed by cerebro-spinal fluid—i.e., the nervous division. The distinction is necessary, since there is practically no connexion between the blood and the cerebro-spinal fluid, so that sterilisation of the former may still leave the latter affected. Complete sterilisation of the body will naturally include both the systemic and nervous parts. This point is illustrated by the following case:—

A boy, aged 17, contracted syphilis in October, and came under care the following January, being covered from head to foot with a diffuse papulo-erythematous eruption. After eight weekly intravenous injections of neosalvarsan the Wassermann reaction became negative; then mercurial injections were carried on until April. Three weeks after treatment was stopped the patient began to complain of headache, insomnia, and loss of appetite. These symptoms became gradually worse, and he came up for advice again in June, by which time he had lost 2½ st. in weight. The boy looked pale and emaciated, the pupils were slightly unequal, and the reflexes were on the plus side, and there was a general hyperæsthesia, otherwise nothing abnormal was discovered; the Wassermann reaction was negative. Fearing cerebro-spinal syphilis, a lumbar puncture was performed with the following result: Cells, 450 per cubic millimetre; 68 per cent. lymphocytes; 27 per cent. endothelial cells; 5 per cent. polymorphonuclears. Nonne-Apelt reaction positive. (This reaction involves the presence of globulin.) Wassermann reaction positive in all dilutions—i.e., from 10 per cent. to 500 per cent. (10% = 1/10 c.c. of a 1 in 10 dilution).

The early onset of cerebro-spinal syphilis makes this case interesting, since few books point out that cerebro-spinal syphilis may occur a few months after infection. I have seen four cases, one of which developed nervous symptoms four months after the chancre was first noticed, no treatment having been received. The other three cases I took to be cured by salvarsan and mercury. Herein also lies the explanation of some of the reported cases of reinfection. Any area of the system can be shut off like the central nervous system, with the result that when the other areas are sterilised the spores in the single area can develop and give rise to a fresh chancre, which is followed in time by the usual secondary symptoms, but such an instance is not a true case of reinfection.

The suggestion at once offers itself that sterilisation of the blood may hasten an attack of cerebro-spinal syphilis owing to a diminution of antibodies. This is, however, far from being the chief point to be learned from such cases. The nervous part of the body can be reached by the infective agent as easily as the systemic, and symptoms of an affection of the former may occur in spite of treatment. The former point is still further emphasised by the fact that the examination of the cerebro-spinal fluid of several early cases of syphilis showed pathological changes; in fact, a lymphocytosis may be obtained in the cerebro-spinal fluid before the Wassermann's reaction in the blood is positive. The cerebro-spinal fluid of latent cases was also examined, and that from cases which had been well treated and in which the Wassermann reaction in the blood was negative; pathological changes were found, although no suggestion of the disease manifested itself clinically.

It is very seldom that treatment given by the skin, muscle, or vein can effect a complete cure in a case of cerebro-spinal syphilis, tabes, or general paralysis of the insane, since the diseased area does not receive a sufficient dose of the drug prescribed. Homer Swift and Ellis[2] have obtained many good results by injecting intraspinously serum rich in antibody, but it is feared the treatment is only palliative, and several injections are necessary to obtain a satisfactory result. The patient is first given an intravenous injection of salvarsan or neosalvarsan, and an hour later blood is withdrawn. The following day, after the serum has separated off, it is collected, mixed with an equal quantity of distilled water or saline (about 25 c.c. of each), and after a corresponding amount of cerebro-spinal fluid has been withdrawn the diluted serum is injected into the canal and the patient placed with his head low down and the bottom of the bed raised so as to allow the fluid to gravitate towards the brain. The best needles for performing lumbar puncture are Barker's, and Messrs. Maw, Son and Sons, the makers, have constructed a mount for my three-way syringe which makes the injection a simple matter. My best results have been in cases of cerebro-spinal syphilis, in which the improvement has been remarkable, but as a rule about eight injections given at weekly intervals are necessary before the cerebro-spinal fluid approaches the normal. In some cases, especially in the parenchymatous lesions,

[1] Part of a lecture given to post-graduates at the London Lock Hospital, April 17th, 1914.

[2] Journal of the American Medical Association, May, 1913, p. 1576.

the globulin and Wassermann reaction never completely disappear. Some cases of tabes have markedly improved, pupil reflexes returned, crises disappeared, gait become steadier; but so much depends upon the stage the patient is in when treated. On the other hand, some of my cases have remained unaltered and a few have been made worse. I know of two cases in which death resulted. Two cases of general paralysis of the insane which I injected were undoubtedly made worse. Three other cases improved but only to a slight extent.

Clinically, we draw a very sharp line between cerebro-spinal syphilis, tabes, and general paralysis of the insane. So sharp is it that we may fail to see the common foundation upon which the three are built. The three conditions are not only extremely closely related but may merge into one another, and which is going to crop up will depend largely upon the treatment that has gone before. If sufficient salvarsan to cure the symptoms be given to a patient during the stage of general infection, but not to sterilise the system, and if a recurrence appear, it may be generalised and indistinguishable from the original trouble. The action of the drug is sudden; on the basis of the life-cycle, as described by me,[3] it may be considered that the gametes which are responsible for the symptoms are killed; the body has no further need to form antibodies, and all is well. The spores remain *in situ* and, having no antibodies to disturb them, resume their cycle and give rise to new gametes in exactly the same situations in which they were stunned.

Under the influence of mercury—the action of which is insidious, and not powerful enough to destroy the gametes as previously described, or to give the host its stimulus for the formation of antibodies—the spores to some extent become crippled, extend peripherally to find fresh soil, and if they subsequently multiply they can give rise to a sufficient number of gametes. The lesions will be fewer, more localised, and in the form of circles or segments of circles. Later, owing to the presence of the spores, the vessels become inflamed. This leads to narrowing of the lumen, diminution of the blood-supply to the part, consequent necrosis, and so a gumma.

During the stage of general infection the nervous system is not spared, and that part of it which is fed by blood—namely, the meninges and blood-vessels, becomes infested with organisms. Sterilisation of the systemic part does not sterilise the meninges, as shown by the case to which I have just referred. There are no antibodies except in the cerebro-spinal fluid—a fact which would appear to be for the benefit of the nerve tissue rather than of the meninges—with the result that a generalised meningitis ensues. The cases of cerebro-spinal syphilis seem to me to be relatively increasing. This, if a fact, is explained on the hypothesis that, owing to the feebler action of the antibodies in the cerebro-spinal fluid compared with that of those in the blood, there is nothing to prevent the extension of the parasites from the meninges into the nerve tissue; and this is more likely to occur where they come most closely in contact—viz., brain and cord.

The former results in general paralysis of the insane, the latter in tabes. Most of the blood-vessels extend into the cord from the meninges along the septum posticum, with the result that the posterior part of the cord is better supplied with blood than the anterior part, and as the syphilitic organisms extend along the paths of the vessels it becomes clear how tabes arises. The vessels to the anterior part of the cord do not run along any septum, and therefore have no close connexion with the meninges. A syphilitic lesion of the anterior part of the cord is a vascular one, and is analogous to the early endarteritis of the basilar artery and its branches in the cranium. This makes transverse myelitis and early syphilitic hemiplegia similar pathological conditions. General paralysis is brought about by a spread of the organisms from the meninges into the cortex of the brain, which brings it into the same pathological condition as tabes. This I have been able to prove by finding the phases of the leucocytozoon syphilidis in both the pia mater and brain substance in nine of the ten cases so far examined. Pure endarteritic lesions, if treated early, are cured, the patient recovers without a trace of what has happened, and the condition does not tend to recur. Pure nerve lesions, such as tabes and general paralysis, are not cured, i.e., broadly speaking, since spontaneous cure in tabes is certainly possible. Should the organisms spread in the nervous part, but be crippled in the way described in the systemic part (as occurs under treatment by mercury), localised symptoms prevail; the cerebro-spinal syphilis will become divided, with the appearance of two separate types—the pure cerebral type and the pure spinal type. Further, when the extension of the organisms has become greater and the vascular disturbance more marked, tabes and general paralysis of the insane will follow, and appear late in the course of the disease when the production of the systemic antibodies is checked. I have observed cases which gave persistently negative Wassermann reactions develop parasyphilis, and only when symptoms showed themselves did the Wassermann reaction become positive.

If adequate treatment is begun before the nervous system is attacked it will presumably always remain free. If treatment is begun after the nervous system has been attacked and the treatment is sufficiently powerful early in the disease to stop the host producing antibodies, symptoms of the nervous system, should they arise, will be those of cerebro-spinal meningitis. If the production of antibodies be not stopped till late in the disease, tabes and general paralysis of the insane will ensue. Therefore, if treatment be begun in the secondary stage with mercury alone, or with one or two injections of salvarsan, the patient will run greater risks of getting tabes and general paralysis of the insane. Both these conditions are, in my opinion, steadily on the increase. If, on the other hand, several injections of salvarsan be given and supplemented with mercury, cerebro-spinal syphilis is more likely to result. The patient should be put under treatment before the nervous system is attacked, since, although the pathological changes in the cerebro-spinal fluid may be made to disappear by treatment, sooner or later they all come back again. As to whether this is true after the intraspinal injections of salvarsanised sera, only the future will show.

The moral of all this is to diagnose a sore at once and to put the patient under the most adequate treatment possible—that is, treatment which may be expected to cure the disease completely.

[3] Proceedings of the Section of Pathology of the Royal Society of Medicine, 1913, vol. vi., p. 85. THE LANCET, Dec. 14th, 1912, p. 1650. Dermatologische Wochenschrift, 1913, vol. lvi., p. 413.

The nervous system may be affected in other ways, but space forbids their mention here.

Treatment by Salvarsan.

In discussing the action of salvarsan reference will be made to the preparation which is now supplied, since it is considerably feebler in its action than the drug which was first used. The majority of the cases of primary syphilis to which one injection was given over three years ago are now both clinically and serologically sound. The majority of the cases of primary syphilis to which two injections of salvarsan were given when the drug came upon the market have developed symptoms since. Of those which were already in the stage of general infection nearly all showed recurrences within a year, and many within three months. It is only since the rule has been followed to give as many injections as are necessary to procure a negative Wassermann reaction in the blood taken between the seventeenth and forty-eighth hour after the last injection, and to prescribe a year's treatment with mercury, that the fewest recurrences have been observed. Probably in a few more years many of those which have not so far recurred will develop symptoms, but until our knowledge increases this procedure is the best. Unfortunately, the Wassermann reaction cannot be relied upon to tell us when a patient is cured because a positive reaction is not necessarily indicative of the disease being active.

In the primary stage, provided that sufficient injections of "606" are given to procure a negative Wassermann reaction in the blood withdrawn within the limits above specified, and that this treatment is further augmented by 24–48 intramuscular injections of mercury, given in 3–6 courses of eight weekly, within the 12–24 months, in the light of our present knowledge a cure is possible. In the secondary stage a cure may possibly be obtained.

Success for the same treatment in the latent stage of the disease and in the stage of early recurrences is improbable, while in the stage of late gummata, nervous syphilis, &c., a cure is impossible—i.e., broadly speaking, since a spontaneous cure may occur at almost any stage. In the primary stage three to five injections and in the secondary stage six to nine injections are required. In late cases even 15 or more injections of salvarsan may fail to procure a negative Wassermann reaction, and supposing a negative Wassermann reaction be obtained it is not long before it becomes positive again. In late cases it appears wiser to give two or three injections of salvarsan to heal the symptoms, and to augment it with a course or two of mercury and iodides, meanwhile informing the patient that he should place himself under treatment again the moment symptoms reappear. Such a patient may go for years without a recurrence, and, should symptoms reappear, they will almost certainly do so at the site of the previous recurrence.

It is universally agreed that the best way to give salvarsan is intravenously, and my own opinion is that the requisite number of injections should follow upon one another at intervals of not longer than eight days; if possible they should be given every four days. It has been frequently noticed that those cases which recurred to which only two injections had been given, with or without supplemental mercurial treatment, were never cured, if the subsequent treatment with salvarsan was given in courses of two.

I had two early cases of syphilis in which each patient received in all more than 16 injections of salvarsan, given in pairs and threes with a course of mercury after each, who, after an interval of three months or more, according to the time at which the symptoms reappeared, were in much the same condition in the end as they were before treatment was started—a point in favour of the view that the spasmodic administration of salvarsan greatly lessens its therapeutic action. A most important point to remember in salvarsan treatment is that if too few injections are given to a patient with infectious symptoms, should the symptoms recur, they will simulate those for which the drug was prescribed. Several cases have been seen of patients who had condylomata, for instance, which disappeared under two injections of salvarsan, returning within three months with condylomata again, in spite of the fact that mercury was given as well.

After insufficient salvarsan treatment symptoms recur before the mercury which has been subsequently prescribed (usually in the form of pills) has had time to exert its action. Insufficient salvarsan treatment in the early stages of syphilis will do more harm than good, as it gives the patient a false sense of security, and renders him for a longer period a danger to the community. I have seen six cases within the last year of patients who had had two injections of salvarsan infecting others when they themselves thought, and had been told, that they were cured. The cases which recur after several injections of salvarsan and mercury have been given may be roughly divided into two classes: (*a*) those in which the symptoms reappear; (*b*) those in which the Wassermann reaction becomes positive. Oddly enough, the majority of the former gave a negative Wassermann reaction, and the majority of the latter show no symptoms. The interpretation of this paradox is at present not quite clear, but nevertheless the observation is an important one, since the class which cannot be recognised by a laboratory test is dangerous, for the symptoms are usually infectious. Another interesting point is that several of the cases that give a positive Wassermann reaction, but exhibit no symptoms, give a negative Wassermann reaction a few months later, and still show no symptoms.

As to whether salvarsan is more potent than neosalvarsan or *vice versa* different opinions prevail. I have given over 2000 injections of salvarsan, and over 4000 injections of neosalvarsan, controlling both by the Wassermann reaction, and have come to the conclusion that the action of both is very much the same. Neosalvarsan has the advantage of being less toxic and more easily administered than salvarsan, and it is perfectly safe to give it to out-patients.

NOTE ON A NEW COMBINED METHOD OF PROSTATECTOMY

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ABOUT two years ago I was summoned one Sunday afternoon to see a man, in his eighty-third year, suffering from retention of urine. I gave instructions to have him shaved for a possible operation and *not* to pass a catheter. On arrival at the King Edward VII. Hospital I found the patient prepared for another attempt at passing a catheter, which I decided not to do on account of hæmorrhage. His condition was an extremely grave one. His tongue

was dry and parched, his breath was strongly urinous in odour, the pupils were very contracted, and he had general subsultus tendinum. The action of the heart could not be felt, and his radial and ulnar arteries were calcified and could be moved from side to side under his wrinkled skin like an articulated stem of a "churchwarden" pipe. Roentgen photographs subsequently taken after recovery showed three long dark tracks in each forearm in the course of the calcified radial, ulnar, and interosseous arteries.

I decided not to tap suprapubically, but to make an incision into the bladder under stovaine spinal analgesia. As soon as the bladder was emptied of fœtid urine I poured about an ounce of pure tincture of iodine into the bladder, before proceeding to enucleate the prostate according to a method which I have adopted for the last seven years, and which was described at the British Medical Association meeting at Sheffield in 1908 and at the Twenty-second Congress of the Association Française de Chirurgie in 1909. I drained perineally after injecting tincture of iodine through the meatus along the urethra into the prostatic bed. Thanks to the assiduous care of my house surgeon, Mr. Owen, in irrigating with hot saline solution for long periods through the suprapubic opening, and to good nursing, the patient made a satisfactory recovery.

There are three points in my operation which require emphasising, as several of my friends who have performed it had not grasped their importance.

1. The first is that the patient is lying on his back as in the ordinary suprapubic operation during the whole of its performance, the perineal opening being made upon the point of the forceps passed transvesically from above, whilst the legs are simply spread apart in order to see and to cut upon the projecting end of the forceps under the skin. The enucleation is as a rule easily done by the forefinger in the bladder, but frequently I pass the other forefinger into the perineal opening to assist the enucleation from below as in the ordinary perineal prostatectomy. The two forefingers enucleating *en rapport* greatly facilitates the performance of those cases which are not easily enucleable.

2. The pouring of pure tincture of iodine into the bladder *before* the enucleation is started is of great importance, because as soon as fresh raw surface is made in the process of enucleation the tincture follows into every hole and corner. The injection of the tincture along the urethra also ensures a cleaner urethra and further floods the freshly made "prostatic bed." Operations can, as a rule, be completed by rubber-gloved hands. (N.B.—There is no danger in using the pure tincture of iodine. I first advocated its use in a paper read at Carmarthen on Dec. 8th, 1904.[1])

3. The operation can be performed as quickly as the suprapubic operation alone. The time I spent in the hospital examining, preparing for operation, completing the operation, and seeing the patient off to the ward was 25 minutes.

Cardiff.

[1] Remarks on Complete Prostatectomy, Founded on 15 Cases, Brit. Med. Jour., May 20th, 1905.

GRESHAM LECTURES, 1914.—Four lectures on the History of Nursing and Florence Nightingale will be given on Tuesday, June 2nd, Wednesday, June 3rd, Thursday, June 4th, and Friday, June 5th, at 6 P.M., by Dr. F. M. Sandwith, Gresham professor of physic. The lectures, which are free to the public, will be given at Gresham College, Basinghall-street, London, E.C.

A CASE OF CONGENITAL DEFECT OF THE ULNA.

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Congenital defect of the ulna is an extremely rare condition. When Wierzejewski recorded a case in 1910 he was only able to collect 22 others from the literature. His paper[1] is the most complete account of this condition yet published, and is furnished with a comprehensive bibliography. He accepts the classification of Kümmel,[2] who divides the cases into three groups, as follows:—

A. The ulna is partly or completely absent; the radius is normal, though often curved; the ulnar fingers are absent.

B. The ulna is partly or completely absent; the radius is ankylosed with the humerus at a more or less obtuse angle; when a proximal part of the ulna is present it also is fused with the radius and humerus.

C. The ulna is partly or completely absent; the upper end of the radius is dislocated forwards and upwards on the humerus.

It is to Group C that the present case belongs. Of the 23 cases, including his own, Wierzejewski placed 7 in Group A, 6 in Group B, 7 in Group C, and 3 he classed as doubtful. As regards sex, 13 occurred in males, 7 in females, and in 3 the sex was not stated. In 7 cases the defect was bilateral; in 4 of these both ulnæ were completely missing, and in 1 case the defect was total on one side and partial on the other. Of the 16 cases where the defect was unilateral, in 11 it was on the right side and in 5 on the left. In 12 cases the defect was total. In 11 where it was partial, in 8 the distal end failed and in 3 the shaft.

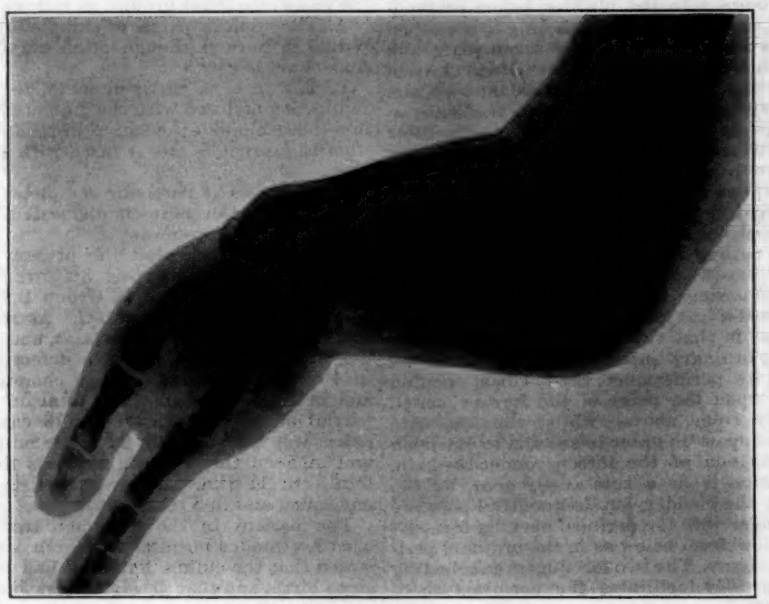
The patient in the case here recorded, a girl aged 7, attended hospital on March 31st. Her aunt stated that the child's left arm had been withered since birth, and that lately it was becoming more crooked. She is the second of three children; her own birth was normal, but her mother died in giving birth to the third child, who died also. There is nothing abnormal in the family history. On examination the following condition was found. The left upper extremity is defective; the lower two-thirds of the ulna together with three digits are absent; the upper end of the radius is dislocated forwards and upwards on the humerus, and the shaft of the radius is markedly curved, with convexity outwards. Of the two digits present one is undoubtedly the thumb, while the other has all the appearance of the little finger. The hand, the palm of which seems to consist solely of a thenar and hypothenar eminence, is deflected to the ulnar side, so that its ulnar margin forms almost a right angle with the ulnar side of the forearm. Except that it is 1 inch shorter than its fellow of the opposite side the left humerus appears normal. (Tip of left acromion to external condyle of left humerus = 7¼ inches; tip of right acromion to external condyle of right humerus = 8¼ inches.) With regard to voluntary movements, the elbow can be flexed and extended completely with good power; the hand can be completely supinated, but from the

[1] Wierzejewski: Zeitschrift für Orthopaedische Chirurgie, Band xxvii., 1910, pp. 101–131.

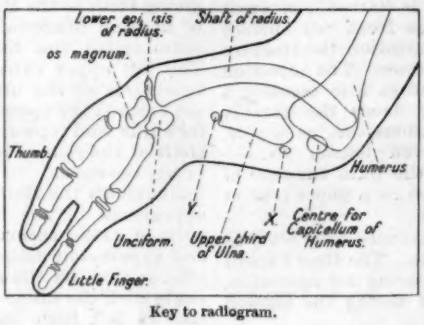
[2] Kümmel, quoted by Wierzejewski, Die Missbildung der Extremitäten durch Defekt, Verwachsung und Ueberzahl. Bibliotheca medica Abt. E, H. 3. Cassel, 1895.

fully supinated position can only be pronated through 90°, inability to pronate it further being apparently due to the curvature of the radius. The wrist can be flexed or extended completely; the thumb and finger can also be fully flexed or extended, and also abducted and adducted, but the thumb cannot be opposed to the finger. These two digits are of great use to the child, being used to hold material when sewing, and for doing up her clothes, &c.

The radiogram taken the next day by Dr. W. Ironside Bruce shows many interesting features. The humerus is apparently normal, and the ossific centre for the capitellum is well marked. Of the ulna, only the upper third is present. Immediately beneath the proximal extremity of this is a small ossific centre X (see radiogram and explanatory diagram); this may be the centre for the tip of the olecranon process, which does not, as a rule, appear so early, or it may be, as Dr. Bruce suggests, the centre for the head of the radius, from which the shaft has been completely separated. One-third of the way down, the shaft of the ulna terminates abruptly in a stump, the lower end of which is slightly cup-shaped. Directly distal to this lower end is another small ossific centre Y (see illustration and key), the size of a peppercorn; this is either the lower epiphysis of the ulna, or more likely, the cuneiform bone. The radius is so much curved that it forms the fifth part of the circumference of a circle, the convexity of the curve being directed upwards and outwards. The upper end does not articulate with the ulna and capitellum, but is dislocated forwards and upwards, lying on the anterior aspect of the lower end of the humerus, apparently articulating in the "radial depression." The centre for its upper epiphysis is absent, unless indeed it is represented by the centre X already described. The lower end of the radius is slightly malformed, but the centre for its epiphysis is present and well marked. At the wrist the centres for two carpal bones are present, and there is also the previously mentioned centre for the cuneiform. An inspection of radiograms of the wrists of normal children of this age only reveals the presence of three carpal bones—the os magum, unciform, and cuneiform, and it is therefore reasonable to suppose that the three centres present in this case are for these bones. Later on centres for other carpal bones may appear. Two complete digits are present: one is a thumb, and the base of its metacarpal is opposite the os magnum; the other has no special distinctive features—the base of its metacarpal is opposite the unciform. There is no sign of the other three digits.



Radiogram showing congenital defect of ulna.



Key to radiogram.

Treatment.—Since birth no attempt has been made to keep the hand in line with the forearm, and the patient has now only come under observation because of the increasing deflection of the hand to the ulnar side. The hand and wrist are now being regularly manipulated every day, and it is hoped that in a few months part of the ulnar deflection will be got rid of. In addition to this a celluloid splint will be worn at night to retain the upper arm, forearm, and hand in as straight a line as possible. If these measures do not meet with the hoped-for success, the advisability of the removal of a wedge of bone from the shaft of the radius will be considered.

Harley-street, W.

GLASGOW UNIVERSITY CLUB, LONDON.—The summer dinner of this club will be held at the Trocadéro Restaurant, Piccadilly Circus, W., on Wednesday, May 27th, at 7.15 for 7.30 o'clock, under the chairmanship of Emeritus Professor John Cleland, M.D., F.R.S.

SECONDARY OR SYMPTOMATIC LEUKÆMIA.*

BY GORDON R. WARD, M.D. LOND.

THE division of anæmias into primary and secondary has long been practised and accepted. That a similar division of leukæmias may conveniently be made it is the object of this paper to demonstrate.

What is ordinarily called leukæmia the writer would call primary leukæmia, and this may be regarded as a disease of which the chief clinical and pathological features reflect the response of the blood-forming organs to a stimulus of which the nature is unknown. It is convenient to suppose that this stimulus is produced by the excessive destruction of white cells within the body, just as after a sublethal but toxic dose of benzene the red cells are destroyed in the body and their products give rise to a very extensive and irregular reaction of those blood-forming organs which are concerned in the formation of red cells.

In leukæmia, then, and in response, as we more or less plausibly suppose, to excessive leucocyte destruction, the blood-forming organs show a great and irregular exaggeration of white-cell formation. Nor is this confined to the marrow, glands, and spleen—i.e., the normal blood-forming organs of the adult. The liver also takes a share, and after death we find in Glisson's capule a by no means inconsiderable amount of tissue which is morphologically (and presumably functionally) identical with that of the marrow or glands as the case may be. In this condition of the liver we have one of the surest criteria of the presence of leukæmia. Further search will reveal similar growths in other organs and in organs which are not associated with blood formation even in fœtal life. But in all these situations we must assume the presence of primitve cells which are capable of forming blood cells under the influence of a sufficiently powerful stimulus.

Now in primary leukæmia we have the most powerful of all stimuli—viz., an excess of the products of leucocyte destruction—and consequently the resulting changes are better marked than in any other condition. Almost invariably, for example, there is so great a proliferation of white cells that the blood shows two or three hundred times the normal number of white cells. This, however, is not an essential of the disease; we know little or nothing of the mechanism by which the cells of the marrow are shed into the blood stream, but clinical observation sufficiently attests that this is a very variable factor even in the individual case of leukæmia, and that the blood may in some cases or at some times be practically normal. Hence, although a "leukæmic blood picture" is good evidence of the changes in the organs detailed above, its absence by no means excludes such changes.

It may be at once stated that in secondary leukæmia the full picture of primary leukæmia is rarely met with, just as in the secondary hæmolytic anæmias—e.g., chronic benzene poisoning—the full, so-called "pernicious," blood picture of Addisonian anæmia is not often met with. Histologically the secondary leukæmias fall naturally into two classes—viz., secondary lymphæmia and secondary myelæmia, these being the usual divisions also of primary leukæmia. The former seems to be especially associated with septic diseases, the latter with cancer.

Clinically, and here it must be admitted that much more information is necessary before anyone can venture to speak with assurance, it seems that we can recognise certain classes of cases more often associated with secondary leukæmia than others. Of course, in all these cases the leukæmia is purely a symptom; it is secondary to obvious or plausibly conjectured causes. Some of these classes can now be discussed.

Secondary leukæmia in septic processes.—Cabot[1] has put on record 4 cases in which there was a blood picture so similar to that of primary lymphæmia as to cause considerable misgiving to the attending physicians. Yet all these cases made a good recovery, and one at least was known to be well 15 years later. In the latter case the lymphocytes reached 70 per cent. of all white cells. It was that of a young physician who infected his finger at a necropsy, and had thereafter swelling of the glands in the axilla of the same side and later in the opposite axilla also. In the next case, one of persistent boils, the lymphocytes reached 86 per cent., and it is further noted that they were unlike the ordinary hæmic lymphocyte in that they showed mitotic figures and other irregularities. One may legitimately attach some importance to this fact when a diagnosis of leukæmia as against lymphocytosis is under consideration. Cabot's other two cases were of a more doubtful type. The blood, indeed, was that of leukæmia, but the clinical signs seem to have been very indefinite. In both sore-throat and enlargement of the glands were present. Dr. J. A. Braxton Hicks, of the Westminster Hospital, informs me that he has seen a similar case, and I remember also a case under the care of Dr. A. M. Gossage in the same institution which presented a lymphatic blood picture and swelling of the glands with a septic condition of the mouth. These cases all made a good recovery and no necropsy was possible.

Lindsay Steven[2] reported a case of broncho-pneumonia in a child aged 1 year and 10 months, in which the white cells reached 236,000 per c.mm., of which 65 per cent. were mononuclears. They are referred to as lymphocytes, but Dr. W. K. Hunter, who examined some of the films, notes that several stained abnormally, so we may assume that they were allied to the abnormal lymphocytes which one expects to meet with in leukæmia. The patient died, but the account of the necropsy is devoted to the condition of the lungs. Cabot[3] also reports two cases of pneumonia in children aged 1 year and 3 months, and 6 years. Both seem also to have had pertussis. In the first the white cells reached 185,000 with 64 per cent. of lymphocytes, and the second 94,000 with 66 per cent. of lymphocytes.

Austrian[4] reports a case of broncho-pneumonia with mastoiditis in a child, aged 4, which proved fatal. The white cells reached 192,000, and the percentage of myelocytes was from 10 to 14. This is not a high percentage, but a little arithmetic shows that the total number of myelocytes per c.mm. was over 23,000. There was also a varying percentage of cells which could not be classified under any of the ordinary headings, and these were, perhaps, myeloblasts. The necropsy showed "marked hyperplasia" of the marrow, although there were "still some areas of fat remaining."

* An abstract of a paper read before the Medical Section of the Royal Society of Medicine on Feb. 24th, 1913.

The "large neutrophil myelocyte" was the predominant cell. The Malpighian bodies in the spleen were grey and "tremendously enlarged." The parenchyma of the liver was infiltrated with mononuclear cells and occasional myelocytes. The bronchial and mediastinal glands were much enlarged. On these facts the presence of a process to which the name "leukæmia" may properly be given seems established. This is the most complete case that I am able to bring forward in this class.

Morawitz[5] records a case in which the patient was aged 16 and suffered from "a feverish malady of the heart without sequelæ." The white cell count was always low, but the myelocytes reached 15 per cent., and of these 1·5 per cent. were eosinophil myelocytes. Recovery was complete. Hirschfeld and Kothe[6] report a case of gangrenous appendicitis complicated by hæmorrhage from a duodenal ulcer in a boy aged 10. The white cells reached 190,000 and the myelocytes 7 per cent.

Fractures and secondary leukæmia.—The second class of cases to which one draws attention with some diffidence comprises those in which a fracture has been accompanied by peculiar blood changes. The classical case is that of Simon,[7] in which an adult negro sustained a fracture of the ankle by having the leg crushed. On admission to hospital the blood showed merely a polymorph leucocytosis, but a week after the following changes were noted—viz., the wound was septic, the spleen was enlarged, and the blood showed 50,000 white cells with 15 per cent. of neutrophil myelocytes, 1·2 per cent. of eosinophil myelocytes, and 17·5 per cent. of mast cell leucocytes. A week later the blood was almost normal, and three months later was still normal. Simon appears to have been at some pains to search the literature for similar findings, but with little result. He says, however: "Hastings writes me that in two cases he has seen myelæmia with myelocytes between 3 and 7 per cent., the one being a severe crush of the thigh and femur, and the other one of the forearm, with no break in the skin and no evidence of infection."

Wiczkowski[8] records the case of a man, aged 24, who also sustained a crush of the ankle, and in whom the inguinal glands on the side of the crush were enlarged ten days later. Soon all the glands and the spleen were enlarged, and the white cells reached 590,000 per c.mm. The patient died, but no necropsy was permitted. It is a peculiar coincidence that Hirschfeld and Kothe[6] also report a case, aged 16, in which there was a fracture of the leg and a leucocytosis of 108,000, but no differential count is given.

Sepsis was probably a factor of importance in most of these cases, and there is not sufficient evidence to incriminate the fractures *per se*.

Cancer and secondary leukæmia.—The first case has not yet been published. It is that of a woman, aged 47, who was under the care of Dr. R. Hutchison at the London Hospital. She was also seen by Dr. F. Parkes Weber. The pathological report will be published by Dr. H. M. Turnbull shortly. I am extremely indebted to these gentlemen for the kindness with which they have permitted me access to the records of the case, and especially to Dr. Turnbull, who has shown me all the sections and specimens connected with it.

The patient died from cancer of the breast and during life was very anæmic. The white cells were 22,000 per c.mm. and the myelocytes 8·5 per cent. It is of interest that a blood count of this sort, which might be paralleled from the records of all sorts of widely differing diseases, was nevertheless associated with extremely extensive myeloid changes in all the organs. At the necropsy the marrow was found to be almost entirely replaced by cancerous infiltration, and the same was true of the spleen, the liver, many of the glands, and the affected breast. The other breast was free from cancer, but nevertheless showed considerable areas of tissue which was composed of cells such as are met with in the marrow. Such tissue was also found about the cancer growths in other organs. It contained not only neutrophil and eosinophil myelocytes, but also foci of red-cell formation in the centre of which were seen primitive nucleated red cells and at the periphery those more fully formed. The red cells in the blood also showed the changes which one meets with in primary myelæmia. Nevertheless there were still some fatty areas in the marrow itself.

The case of Kurpjuweit[9] was very similar. The patient was a woman aged 34. The primary disease was in the stomach. The liver, spleen, and some of the glands showed myeloid transformation. The blood showed 11 per cent. of myelocytes, but the total number of white cells was not increased.

In the case of Kast,[10] a man with carcinoma of the penis of 18 months' duration, the spleen was myeloid and contained Charcot-Leyden crystals; the marrow contained the same crystals. The glands that did not contain cancer were myeloid. The white cell count was rather remarkable, the numbers reaching 120,000 per c.mm., but the myelocytes were only 1 per cent.

Other cases of secondary leukæmia.—Emile Weil[11] investigated cases of variola before suppuration had set in, and found remarkable changes in the blood which were of short duration, being displaced by a polynuclear leucocytosis later. He remarks apropos of the blood picture: "En meme temps coexiste toute la série des formes leucocytaires qu'on peut voir dans la leucémie myélogène." He also finds nucleated red cells but rarely except in the hæmorrhagic form. He claims that he is the first to describe this "syndrome." Courmont and Montagard[12] covered the same ground, and agreed with his "leukæmic" finding.

Labbé and Delille[13] record a case of hereditary syphilis in a child 1 month old with enlarged spleen. The white cell count was increased, and the mononuclears were altogether 85 per cent. Of these 50 per cent. were large mononuclears. In the discussion which followed his communication, several speakers emphasised the fact that this "anémie pseudo-leucémique" was only a symptom and not a disease, and might be met with in syphilis, rickets, tuberculosis, and intestinal infections. Dominici[14] carried out some experiments on dogs with the idea of producing myeloid changes, and seems to have been very successful in experimental tuberculosis, typhoid, sepsis, and potash poisoning. He remarks that the hæmopoietic organs react as a whole to these poisons, but do not bring the changes into comparison with those of primary leukæmia.

Dr. Turnbull informs me that he has always taught that the splenic anæmia of infancy described by von Jaksch was a myeloid leukæmia, and very kindly showed me slides from several cases which certainly seem very strongly to support that contention.

Conclusion.—It is submitted that the above cases considered alone are sufficient justification for a division of leukæmia into primary and secondary.

It is quite true that primary leukæmia, of which the cause is not established, may be due to some micro-organism which will eventually be identified. Then all leukæmias will take their proper places as symptoms of the specific infections or other disease processes with which they are associated. The so-called primary anæmias are already reaching the stage to which leukæmias must eventually come. No progress, however, is likely to be made with the study of leukæmia clinically until subdivisions are established, and in this case the idiopathic varieties are properly and according to precedent labelled primary until their true nature can be established.

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Sevenoaks, Kent.

BACILLUS COLI AS A CAUSE OF SEPTIC ONYCHIA.

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AND

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THREE cases have recently come under our notice of septic onychia due to infection by the bacillus coli.

One of these cases occurred in a medical man who was attending a case of bacillus coli cystitis, which he was treating by lavage of the bladder. He developed a very painful swelling, red, tender, and œdematous, round the roots of two nails. In both the affected fingers there was a history of a minute abrasion. These were treated by incision and cauterisation without effect. Two doses of stock staphylococcus vaccine produced no improvement. A culture taken from the sero-purulent discharge which exuded from beneath the swelling contained as well as some staphylococci and diphtheroids, bacilli coli, morphologically and culturally typical. The patient's opsonic index to the bacillus coli was found on two occasions to be raised above 2. His serum did not agglutinate the bacillus coli. A vaccine of this micro-organism was administered, and after the first dose of 2½ millions immediate improvement set in, and it was only necessary to administer a second dose to secure a complete cure. Both nails were lost.

The second case was that of a lady with a curious condition of the nails. The lesions resembled psoriasis and had been diagnosed and treated unsuccessfully as psoriasis. The condition had first appeared 14 years ago and had lasted for one year and then disappeared. Four years ago it returned and had persisted ever since. The margin of skin around the nails at intervals became swollen and discharged pus. This patient was troubled with constipation, "bilious turns," and headaches. The pus from the fingers contained bacillus coli in pure culture. She was treated with a bacillus coli vaccine (autogenous). Vaccination was followed by marked benefit. Her fingers on the last occasion on which she was seen were practically well. Her general health was also greatly improved. The reaction from the vaccine caused the fingers to inflame and was accompanied by diarrhœa and sickness.

The third case was one of very severe onychia. A swab taken from this case yielded on culture bacilli coli and staphylococci. Here again vaccine treatment with the patient's own strain of bacillus coli was of value. In these two latter cases no obvious source of infection was discovered.

We thought that these cases were of sufficient interest and importance to report, as we have been unable to discover any previous record of onychia due to this organism.

A CASE OF TETANUS TREATED WITH SUBCUTANEOUS INJECTIONS OF CARBOLIC ACID; RECOVERY.

BY W. GRAHAM REYNOLDS, M.R.C.S. ENG., L.R.C.P. LOND.,

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THE patient, a boy aged 11, was paddling in a canal when he cut his foot on a piece of glass. Ten days later he complained of stiffness in his neck. For the next four days there was increasing difficulty in moving the head, and the muscles of the lower jaw showed signs of rigidity. On the fourteenth day from the date of the accident the spasms started, and he was admitted to St. Mary's Hospital during the evening.

On admission general rigidity was seen, and there was well-marked opisthotonos. Abdominal spasm was particularly evident, and there was inability to open the mouth. The risus sardonicus was also present. He had very frequent and severe spasms, but was mentally quite clear. There was a very small wound, nearly healed, on the dorsum of the right foot, one inch from the cleft between the second and third toes; there was also the scar of a small recent cut in the cleft between these toes.

The patient was anæsthetised. The wound and the scar were excised and pure carbolic acid was applied. At the same time the subcutaneous injection of carbolic acid was started, 1 oz. of a 1 per cent. solution being given in the right axilla. Under chloroform anæsthesia the injections were repeated as in the list, the strength of the carbolic solution being raised to 3 per cent. The groins and axilla were treated alternately. Chloroform was administered at each injection owing to the spasms produced by the stimulation of the needle-prick. A careful watch was kept for carbolic acid poisoning, but at no time did the patient show any symptoms. The urine retained its normal colour throughout.

On the day following admission the spasms became very violent, and the child suffered great pain. Potassium bromide gr. xx. and chloral hydrate gr. x. were administered four-hourly, and the patient became quieter. On the sixth day cutaneous erythema and slight œdema were noticed at the sites of injections, and these were discontinued. The spasms were increasing in violence and frequency, and the carbolic solution was again administered on the seventh day.

The injections were discontinued on the eighth

and ninth days, but were recommenced at 2 A.M. on the tenth. On the thirteenth day the opisthotonos became very marked, and it increased during the following six days. By the twentieth day it had become excessive, although the spasms decreased both in violence and in frequency. On the same day the opisthotonos suddenly began to diminish, and had entirely disappeared by the twenty-third day.

The rigidity, especially that of the abdomen, did not relax for some time; in fact, this did not disappear for about seven weeks. The patient was able to open the mouth slightly about the sixteenth day, and by the eighteenth was eating bread and butter. Improvement continued uneventfully during the next four weeks, and he was discharged cured on the fifty-sixth day. He was seen three weeks later on return from a convalescent home, and was in perfect health. No antitetanic serum was administered.

The chief interest in this case lies in the fact that the carbolic treatment, recommended so long ago as 1888 by Bacelli, but which has never gained many adherents in this country, was adopted throughout, and also the fact that at the time, when for the reasons stated it had to be discontinued, the spasms increased in number and violence, the recommencement of the injections at once modifying these attacks. This does seem to prove that carbolic acid has a definite action in inhibiting the reflex activity in the cord.

It would be interesting to hear the results of others who have tried this treatment, and to know the dosage they employed.

I have to thank Mr. J. Ernest Lane, senior surgeon to St. Mary's Hospital, for permission to publish this case.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF RODENT ULCER IN AN UNUSUAL SITUATION.

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RODENT ulcer is a common affection when found on the face, particularly on the upper third, and mostly about the inner canthus of either eye. On any other part of the body it is decidedly rare, and for this reason its occurrence elsewhere than on the face is worthy of note.

The patient, a woman 52 years of age, was admitted to the Glasgow Royal Infirmary during November of last year for treatment of a large slowly spreading ulcer situated on the back between the scapulæ and towards the right side. It commenced nine years ago as a small wart, which for some time was unheeded, till it ulcerated and discharged, when she sought advice. Since then it has gradually increased in size, though under treatment apparently healing over from time to time, and as often breaking down again; but for the last two years the discharge has been constant, with progressive increase in size.

On admission an ulcer about the size of the palm of an adult hand occupied the above situation, extending down to the fascia covering the muscles of the back. There was no tumour, the condition being purely spreading ulceration. The base was fixed, the outline irregular, and the floor pale, free from granulations and exuding a scanty, sticky, muddy discharge. The edges were slightly raised, indurated, and sinuous in outline. Parts of the surrounding skin had a dusky hue from passive congestion, and, though full from œdema, extended otherwise unaffected right up to the margin of the ulcer. The patient's general health suffered little in consequence, and there was no evident glandular involvement or metastasis elsewhere. The ulcer was completely excised and the raw surface treated with carbon dioxide snow.

Histological examination.—The sections prepared were from the margin of the ulcer, and present the characters of a rodent ulcer. Broad processes of the deeper layers of the epithelium are observed dipping deep into the corium. The cells are arranged in groups varying in size,

From a microphotograph.

discretely scattered through a fibrosed corium. They are all alike in type, resembling the cells of the deeper layers of the epithelium, but differing among themselves a little in size and shape, many showing mitotic figures. A few of the cell groups have a necrosed centre, the stratum corneum is atrophied, and there are no cell nests.

Glasgow.

AN UNUSUAL PERI-SINOUS ABSCESS.

BY HAROLD L. WHALE, M.D. CANTAB., F.R.C.S. ENG.,
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A GIRL, aged 5, was seized with earache and vomiting on Christmas Day, 1913. On admission to hospital on Dec. 29th she presented the stereotyped signs and symptoms of acute suppurative mastoiditis. Except measles two years previously, and mild recurrent earache for one year, inquiry elicited no relevant history. The membrane was bulging but intact; the retro-auricular swelling was tense and fluctuating.

A Schwartze operation was at once instituted. The periosteum was found to be lifted up by a bag of pus, but deep to this the outer antral wall was intact and healthy. Beginning at a point one-eighth of an inch behind the surface marking of the posterior limit of the antrum and running backwards for nearly an inch was a fistula one-eighth of an inch wide, quite straight and quite horizontal; nearly an ounce of thick foul pus gushed through this slit. On removing the outer antral wall it was evident that the pus in the antrum, a mere bead, had no macroscopic connexion with that which lay along the horizontal part of the lateral sinus; the finest seeker detected no fistula. In front, the purulent focus was shut off by adherent dura, so as to end abruptly at the upper genu of the sinus, where its horizontal passes into its sigmoid limb. The edges of the bony fistula were widened with a chisel to a quarter of an inch, and with simple drainage recovery was uneventful.

This case presents certain points of interest. 1. It is not without precedent for an acute otitis media to lead to acute mastoiditis without perforating the membrana tympani; nor, again, for an acute antritis to proceed to intracranial infection without finding its way through the outer antral wall. But the double event, which happened in this case, is very rare—that is, for an acute otitis media not only to leave the drum intact, but also to show no evidence of assault on the antral wall, and first to declare itself remotely as pus in the posterior fossa. 2. If, in explanation of the route selected in this case, we invoke the line of least resistance, the possibilities are: first, the saccus endolymphaticus by the aquæductus vestibuli (but during this journey the infection must have caused labyrinthitis, whereas this patient had no nystagmus, vertigo, or interference with vestibular reactions); or, secondly, one of the sutures, after delayed or imperfect closure between the component parts of the temporal bone. In this latter event, if the infection had travelled by the petro-mastoid suture, it would have reached the middle rather than the posterior fossa, and there would have been no visible external fistula; if by the squamo-mastoid suture, the dehiscence would have been directed obliquely upwards and backwards. There is no anatomical reason for a fistula extending horizontally backwards, and the route taken is therefore not easy to explain. 3. It is very uncommon for a peri-sinous abscess to track along the horizontal part without also, and as a rule previously, involving the vertical part of the lateral sinus.

Harley-street, W.

ROYAL WEST SUSSEX HOSPITAL.—There has been no more eventful year than 1913 in the history of this hospital at Chichester—one of the best-equipped and best-served hospitals in the south of England. After extensive reconstruction work the institution was visited by King George, who declared it re-opened as a Royal hospital in memory of his illustrious father. The whole cost of that reconstruction scheme was met, and on that account there is a small balance in hand. The income account showed a deficiency of £210 7*s.* 6*d.*, and in spite of the strictest economy it is found that the ends are not meeting. An annual income of £4200 is necessary if the hospital is to be kept going as now, and an earnest appeal is being made for at least another £500 a year in addition to the existing income. Although a broken year, owing to the extensive reconstruction work, the in-patients numbered 510 and the out-patients 2640.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF SURGERY.

The Relation of Ducts and Acini to Cysts and Cancer of the Breast.

A MEETING of this section was held on May 12th, Mr. G. H. MAKINS, the President, being in the chair.

Mr. G. LENTHAL CHEATLE read a paper on the Relation of Ducts and Acini to Cysts and Cancer of the Breast. He said that in proof of the ducts being the cause of cysts he would state that: (*a*) In the normal state the columnar type of cell which lined the ducts extended to the acini, but was not continued into them. Cysts were lined by the same epithelium. (*b*) An accidental injection by a central hæmorrhage occurred in a cystic breast. The only parts injected with blood were the normal ducts, and even the acini, and also the cysts. (*c*) The cysts could be shown opening into acini. The acini were not dilated. Single cysts, although apparent clinically as such, were always coexistent with smaller cysts, which were easily made manifest by microscopical examination. It was hard to understand why cysts formed. He believed they formed to accommodate the proliferating epithelium. Obstruction to ducts might conceivably induce cystic formation, but it would not be likely to cause the intracystic papillomatous condition which was so common in cysts. The hæmorrhagic breast to which he had alluded appeared to confirm the idea that no obstruction existed, because all the ducts, acini, and cysts were full of blood. Acini would be more likely to be dilated were obstruction the cause of the cystic condition of ducts. Duct cancer divided quite obviously and naturally into two types—(*a*) intracystic papillomatous, and (*b*) intracystic "laciform." 1. Each, even when type appeared present, was more or less mixed. 2. Each in its spread showed alveolar arrangement in parts. Hence to discover the origin of an alveolar cancer of the breast large sections, and possibly extensive serial sections, might have to be made. It must be noted that even in the alveolar arrangement there was a tendency for each to become typical of its origin. 3. Each showed simple cystic conditions. 4. The lymphatic glands, when affected, showed the intracystic "laciform" type. He had not yet discovered the intracystic papillomatous type in a lymphatic gland. With regard to the relation between acini and cysts, he had no evidence to prove or even indicate that one existed, nor that there was any relation between acini and cancer. In his 250 cases of cancer of the breast 45 per cent. were duct cancer in origin. Of the remaining 55 per cent., some might have been of similar origin. In no case could he trace a definite connexion between cancer and acini. He did not mean to say it did not exist. Probably at wanted only definite proof. An alveolar arrangement certainly was no proof.

Mr. Cheatle then gave an exhibition by the epidiascope of 52 macroscopic and microscopic preparations of duct cancer of the breast in support of his contentions.

SECTION OF LARYNGOLOGY.

Exhibition of Cases.

A MEETING of this section was held on May 1st, Dr. D. R. PATERSON, the President, being in the chair.

Dr. W. MILLIGAN showed X ray bismuth photographs of three patients with Pharyngeal Pouches. An external operation was performed in the three cases; one died from septic pneumonia (probably due to food ingestion).—Dr. G. W. HILL advised Halstead's operation, in which the unopened sac was dissected out and turned upwards into the upper angle of the external wound. At a second operation after the formation of adhesions the sac was removed. He considered the photographic method better than œsophagoscopy for diagnostic purposes.

Dr. MILLIGAN also brought exhibits of Inoperable Thyroid Gland and Fungating Œsophageal Carcinomata treated by radium emanation tube. He pointed that out it was essential to exclude the α and β rays and utilise the γ rays by suitable

filters. Irradiation of healthy tissues was dangerous.—Sir FELIX SEMON related an instance where radium caused sloughing with fatal mediastinitis.—Mr. W. D. HARMER had found that external insertions of 150 mgm. of radium for 18 hours resulted in a wound which did not heal.—Dr. HILL laid great stress on the filtration. He had employed 150 mgm. with a screen of 2 mm. of platinum covered with rubber for 18 hours without injurious effect.—Mr. S. HASTINGS in 18 cases had found sloughing in one case where septic teeth were present. He placed the radium in a Symonds' funnel and inserted it by means of an œsophagoscope.

Mr. E. A. PETERS brought forward a case previously exhibited with left unilateral abductor paralysis, but which now had progressed to complete paralysis with the cord in a cadaveric position.

Dr. J. DONELAN'S two cases of Papilloma of the Vocal Cords, in which he had found it easier to employ the indirect instead of the direct method, were discussed by Sir STCLAIR THOMSON, who related that both Killian and von Eicken preferred the indirect method where this could be employed. Indeed, by the old principle of *cito, tuto et jucunde* the indirect method came first.—Sir FELIX SEMON remarked that the need for good technique in the application of the indirect method had constituted laryngological work as a specialty, accordingly he regretted the disuse of this method by the younger men.—Dr. HILL pleaded for the simplicity of direct laryngoscopy, and mentioned the tolerance of chronic tuberculous patients to its use. He also considered that suspension laryngoscopy would still further diminish the field of the indirect method.—Mr. E. B. WAGGETT upheld indirect laryngoscopy.—The PRESIDENT considered that where a general anæsthetic had to be employed the direct method was preferable, in other cases the indirect. The advance from the days of Hartmann's direct spatula to the present duck-billed tubes was remarkable.

Dr. W. JOBSON HORNE showed a case of Laryngeal Neoplasm which Mr. H. C. FOX and Mr. J. F. O'MALLEY considered to be attached to the anterior commissure; also an extreme case of Congenital Webbing of the Palate.

Dr. L. H. PEGLER brought a case with an Œdematous Fibroma depending from the left vocal cord.

Mr. C. I. GRAHAM exhibited a case of Chondro-Sarcoma of the Pharynx.

Mr. P. R. W. DE SANTI'S case of Lupus of the Nose, Ear, and Tongue and Pharynx was discussed. The Wassermann reaction was only partially positive on one occasion; giant cells, but no tubercle bacilli, were recognised in a microscopical preparation.

Mr. C. POTTER'S case of Perithelioma of the Pharynx, which was enucleated with the capsule by an incision through the mucous membrane, was referred to Mr. S. G. Shattock.

In Dr. HILL'S case of Carcinoma of the Base of the Tongue and Epiglottis Mr. DE SANTI recommended a subhyoid pharyngotomy through a central incision.

SECTION OF OTOLOGY.

Primary Tuberculosis of the Ear.—Exhibition of Cases.

A MEETING of this section was held on May 15th, Mr. RICHARD LAKE being in the chair.

Dr. W. JOBSON HORNE described a case of Primary Tuberculosis of the Ear in a child aged 13, in which the diagnosis was established by the finding of tubercle bacilli in the tissues over the necrosed portion of the temporal bone, which he exhibited. There had been a cough for three months, and the child had been wasting seven months; there had been measles two months ago. Fifteen days before death facial paralysis developed, and the child died with signs of cerebral disease. There had been a discharge from the right ear for about four months. Post mortem the temporal bone and membrana tympani were found to have been destroyed, the ossicles had perished, and the middle ear was disorganised. The antrum and middle ear were filled with débris and caseous matter, and the cancellous portion of the mastoid was involved. Above and behind the external auditory meatus a subperiosteal abscess was found, and at its site a sharply defined area of necrosed bone corresponding to the outer wall of the antrum. On deflecting the dura mater from the cranial surface of the bone an extradural abscess was found and some tuberculous deposits. There were also found extensive disease of the lymphatic glands, general miliary tuberculosis, tuberculous meningitis, and tuberculous nodules in the brain. Dr. Horne expressed the opinion that primary tuberculosis of the ear presented such definite clinical and pathological features that it could easily be distinguished from the secondary form of the disease. Primary tuberculosis of the ear was essentially a disease of childhood, if not even of infant life. This case also illustrated the exhibitor's contention that in the primary form the stress of the disease was, in the first instance, on the mastoid bone.—Mr. C. E. WEST, in discussing the case, said that bone tubercle was very rarely primary in the sense of being the site for the first deposition of tubercle in the body; it was nearly always preceded by a focus, generally a caseating one, in the lymphatic glands. Supposed tubercle of the temporal bone in children he believed to be much rarer than was generally supposed. The operative results on these cases, though good at the time, were unfavourable later, for 50 per cent. died from tuberculous meningitis three or four years afterwards.

Dr. E. A. PETERS and Dr. H. J. DAVIS showed interesting cases of Exostoses of the External Meatus, and the advisability of operation in such instances was discussed. Dr. Davis also showed a remarkable case of Recovery from Operations, at different dates, on two large temporo-sphenoidal abscesses. The patient, a girl aged 16, was shown a year ago after recovery from an abscess on the right side, and three months ago she again presented herself with similar symptoms on the left side—namely, earache, vomiting, and vertigo—and an aural polypus was protruding from the meatus. Owing to great restlessness, aphasia, and rapid unconsciousness, with rotatory nystagmus to the right, and signs of meningitis, he, with the assistance of Mr. Addison, opened and drained a large temporo-sphenoidal abscess. The brain was motionless and on incision pus and a quantity of sanious fluid streamed from the lobe, which then commenced to pulsate. Salines were continuously administered, and Mr. Addison performed lumbar puncture. As the pathologist reported that pus was found in the cerebro-spinal fluid the prognosis was regarded as hopeless. Dr. J. M. Bernstein and Dr. Elworthy, who also saw the case, recommended intraspinal injections of antistreptococcus serum, and 10 c.c. were given twice at 24-hour intervals. She also had three vaccine injections in the flank, and was kept alive on champagne, pituitrin extract, &c., and her recovery, though slow, was uneventful. She was now bright and the aphasia had disappeared, but she could only hear the tuning fork on contact.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Empyema in Children.—The Pathology and Etiology of Duodenal Ulcer.

A MEETING of this society was held on May 6th, Dr. JOHN PLAYFAIR, the President, being in the chair.

Dr. NORMAN WALKER showed a case of advanced Mycosis Fungoides apparently cured by the application of X rays, only pigmented areas remaining.

Dr. G. H. MELVILLE DUNLOP contributed a paper on Empyema in Children, based upon 98 cases treated in his ward in the Sick Children's Hospital. He pointed out that during the same period in which these empyema cases occurred there had been 861 cases of pneumonia, or 1 case of empyema to every 8 or 9 cases of pneumonia. The pleural fluid effused during childhood showed a marked tendency to become purulent, and the younger the child the more pronounced was this tendency. The effusion in a child under 3 years would almost certainly be of a purulent character. In 59 cases of pleural effusion in such young children the fluid was purulent in 53. The tendency of the fluid to become purulent gradually lessened from 3 years till the age of 10, when the formation of a serous effusion was usual in the great majority of cases. Of 149 cases of pleural effusion the following was the analysis:—

Under 6 months of age	3	cases,	all	purulent.		
Between 6 months and 12 months	9	,,	8	,,	1	serous.
,, 1 and 2 years	26	,,	24	,,	2	,,
,, 2 ,, 3 ,, ...	21	,,	18	,,	3	,,
,, 3 ,, 5 ,, ...	23	,,	18	,,	5	,,
,, 5 ,, 10 ,, ...	57	,,	27	,,	30	,,
Over 10 years	10	,,	1	,,	9	,,

The following shows the percentage distribution of infecting organisms: In 53 per cent. the pneumococcus was present

alone; in 16 per cent. the streptococcus was present alone; in 14 per cent. the pneumococcus and streptococcus were mixed; in 3 per cent. the staphylococcus and streptococcus were alone; in 1 per cent. staphylococcus and pneumococcus were mixed; in 2 per cent. the staphylococcus, pneumococcus, and streptococcus were mixed; in 3 per cent. the tubercle bacillus and streptococcus were alone; and in 6 per cent. there were no growths. As to the causation of empyema in children, while admitting the occurrence of primary forms due either to cold or injury, Dr. Dunlop believed that in the majority of cases the condition was secondary. In only 7 per cent. of the cases was a history of lung or other antecedent history lacking. In the majority of cases the effusion either occurred with or followed lobar pneumonia, and then the fluid was invariably purulent. Empyema in his experience was much less frequently associated with bronchopneumonia. It frequently developed after scarlet fever, measles, or whooping-cough, and occasionally after influenza. Any suppurative process, such as purulent arthritis or osteomyelitis, might account for it, and in young infants septicæmia was a common cause. In striking contrast to empyema in the adult, a very small proportion in children was due to tubercle. Of his cases, lobar pneumonia accounted for 69 per cent.; infectious diseases, 11 per cent.; bronchopneumonia, 5; suppurative processes, 3; tubercle, 3; influenza, 2; causes unknown, 7. In most instances the effusion in cases of pneumonia occurred within a few days of the crisis. Sometimes the symptoms heralding the onset of empyema were acute and violent; in others they were insidious and indefinite. He cordially agreed with the writer who said that latency in pneumonia was synonymous with carelessness in the physician. The child was often sent into the hospital with a diagnosis of atrophy or miliary tuberculosis, and the general appearance went far to confirm such a diagnosis. In six of his cases convulsions were the earliest manifestation of empyema, while the other symptoms in the order of frequency were fever, cough, vomiting, quick breathing, sweating, restlessness, and delirium. In older children, and especially after infectious diseases, the foregoing symptoms were less pronounced, but the child gradually assumed a languid appearance, suffered from a short paroxysmal cough, and emaciated rapidly. As regarded sex, 53 were boys and 45 girls. The left side was involved 45 times, the right 39, which was not at all the usual proportion or what would have been expected from the frequency with which left-sided pneumonia occurred. Both sides were involved in four cases. The amount of fluid varied greatly both in quantity (¾ oz. to 40 oz.) and in the time it took to collect. In some cases he found one side of the chest filled with pus in a few days. A number of symptoms were very suggestive of empyema. First, in almost every case the child looked seriously ill, had an anxious, pinched, and frightened expression, and was profoundly anæmic. The face was earthy or yellow in colour with sometimes puffiness under the eyes. There was a very rapid and sometimes extreme emaciation. When a child was suffering from marasmus he invariably excluded three diseases—viz., tuberculosis, congenital syphilis, and empyema—before concluding that the diagnosis was correct. There was usually some cough, either suppressed or paroxysmal, and the breathing was quick, but never so quick as in pneumonia. Even when the pleura was full of pus there might be little real dyspnœa. The temperature was usually raised from 3° to 4°, and it might be very high or subnormal. In ten of his cases it was either normal or subnormal during the whole period of observation. Clubbing of the fingers might be observed when the empyema had lasted a long time. When the fluid was present there was generally a leucocytosis of from 20,000 to 30,000. His experience did not bear out the statement that diarrhœa might be present. Clinically, whenever absolute dulness of a board-like character at the base with a boxy percussion note at the apex was noted a pleural effusion should be suspected. The sense of resistance to the percussing finger also was of great value. It was quite common to get loud tubular breathing over a purulent effusion in the child—a misleading point to those accustomed to investigate empyema in the adult. Vocal fremitus was of little help, but displacement of the heart's apex was a very valuable aid in diagnosing fluid in the chest. It might be found in the epigastrium, or even as far as the right mammary line. The complications of empyema were generally due to further pneumococcal infection, and the commonest was purulent pericarditis, present in 40 per cent. of his fatal cases. This complication, often altogether undiagnosed during life, for friction was seldom if ever detected, should always be suspected if after draining the pleura freely the child continued ill with a rapid pulse. Purulent meningitis and peritonitis also occurred, but not suppurative arthritis or general septicæmia. Diagnosis was often difficult without the aid of an exploring needle; it might have to be passed repeatedly before the collection was reached, and even then if the fluid were thick it might not pass, or large masses of lymph might block the lumen. It was often said that a hectic temperature indicated pus, but he had found as high temperatures in serous as in purulent cases. The prognosis of pleural effusion was difficult, as the mortality was largely determined by the cause and duration of the illness and the age of the child. In the 98 cases there were 20 deaths, or 19 per cent. Under 2 years the prognosis was very grave; in 30 cases he had 11 deaths (36 per cent.). After 2 years 68 cases with 9 deaths (13 per cent). With a double effusion, of 4 cases only 1 recovered. Pneumococcal cases over 2 years almost invariably recovered, but in streptococcal and mixed infections the prognosis was not nearly so good. Tuberculous empyema was fortunately rare in the child, but the prognosis was not nearly so grave as in the adult. Pus in the pleural cavity should be evacuated as soon as diagnosed, for if the drainage was good and sepsis avoided the risks of complication were greatly diminished. In most cases any attempt to relieve the effusion by aspiration was a dangerous waste of time, and it was not very efficient. Where the exploring syringe had drawn off merely turbid serum aspiration had often given him good results, and it should be tried in very young infants unable to stand a serious operation. Aspiration was useful also, when the effusion was very large, to draw off a quantity of pus the day previous to operation. It did not draw off all the pus; large masses of fibrin were left, and no drainage being possible resection was usually needed later. In operation either resection of the rib or simple incision of the pleura formed the choice. The former gave better drainage and less risk of sepsis but was a more serious operation. Simple incision was better for young infants. Of his cases, 8 were aspirated, with 1 death; 61 were resected, with 14 deaths; and 29 were incised, with 5 deaths. The main danger of the operation being syncope and death from the anæsthetic, local anæsthesia was preferable in young infants. The incision, 2 or 3 inches long, should be made in the sixth interspace in the mid-axillary line. To avoid syncope the pus should be allowed to escape very gradually. The tube might be removed in 7–10 days and should seldom be retained longer than 3 or 4 weeks.—Professor F. M. CAIRD alluded to the value of Truby King's suggestion of having a few drops of sterile water in the exploring syringe, so that if the needle became blocked a few drops could be injected and then withdrawn. If pus were present it could easily be detected in the syringe.—Dr. JOHN THOMSON said that he had never been able to hear friction in pericarditis in children. He attached importance to the child's general health in determining whether a pleurisy were serous or purulent. If the child was healthy there was much less risk of empyema than if it were weak. As a preliminary measure he favoured aspiration, and he had had two or three dozen cases where a single aspiration had been sufficient to effect a cure.—Dr. ALEXANDER GOODALL had found auscultation very misleading in empyema in adults, and bronchial breathing was often marked and loud over an effusion.—Dr. DUNLOP replied.

Mr. D. P. D. WILKIE read a communication entitled "Observations on the Pathology and Etiology of Duodenal Ulcer," with an epidiascope demonstration. He said that the credit of recognising that this ulcer was of frequent occurrence was due to W. J. Mayo, Moynihan, and Mayo Robson. He wished to demonstrate certain facts gained chiefly from the post-mortem room. During the past three years he had investigated the condition of 490 cadavers, and he had met with 41 cases of duodenal ulcer, and in only 6 of these had the ulcer any direct connexion with the death of the patient. In only 6 cases had a diagnosis of duodenal ulcer been made before death, and all of them had been operated on. In one or two cases where a chronic ulcer had been found it had

caused during life none of the typical symptoms. Such "silent" ulcers might attain considerable size and cause death from hæmorrhage or perforation without producing any noteworthy symptoms. The subjects of these "silent" types of duodenal ulcer were generally old people with arterio-sclerosis. The "syndrôme pylorique" described by Soupault and resembling the Moynihan's symptom-complex of duodenal ulcer might be, but was not invariably, associated with a duodenal ulcer. It appeared to be the clinical expression of an irritable condition of the pyloric musculature favouring spasmodic contraction. It might, however, be associated with an ulcer on the gastric side of the pylorus. *Morbid anatomy:* In the 41 cases the lesions were situated on the first part of the duodenum and with two exceptions within one inch of the pylorus. In 9 cases the ulcer was on the anterior wall from half to three-quarters of an inch beyond the pylorus; in 12 it was on the posterior, and in other 12 there was an ulcer on both anterior and posterior walls directly opposite one another (the so-called "kissing ulcers" of Moynihan). In 5 cases the ulcer was at the upper part or roof of the duodenum just beyond the pylorus, whilst in one female case a large ulcer occupied the lower wall of the duodenum, extended to the posterior wall, and invaded the pylorus. In 21 cases there was but one ulcer, in 16 two ulcers, and in 4 more than two ulcers. In some of the cases where a fair-sized ulcer was found on the posterior wall no suspicion of its presence had been aroused by a careful examination of the unopened gut. The impression left by such cases was that this type of ulcer must be frequently overlooked at operation, and the question arose whether the duodenum should not be opened in doubtful cases. In 5 cases besides the duodenal lesion one or more gastric ulcers situated on the lesser curvature some distance from the pylorus were found. Of acute and chronic ulcer it was not so easy to speak with assurance as in the case of gastric ulcer. With ulcers on the anterior wall, many which from the outer surface of the intestine showed evidence of chronicity closely resembled acute ulcers when viewed from the mucous aspect. Chronic ulcers of the posterior and postero-superior walls were usually more easily recognised, resembling as they often did the large crater-like ulcers of the stomach. The essential factor for the formation of a duodenal as of a gastric ulcer, was that a portion of the mucosa became so devitalised that it might be digested and leave a breach of surface. This devitalisation might be brought about by (1) the lodging of an embolus in an arteriole of the duodenal wall; (2) venous embolism; (3) the circulating of toxin in the blood, causing a degeneration not only of the lining epithelium of the bowel but of the endothelium of the capillary blood-vessels, so that small hæmorrhages took place and determined local areas of lowered resistance; and (4) reflex nervous spasm of the vessels or of the muscularis mucosæ causing small hæmorrhages into the mucous membrane. He discussed these causes at length, and said that toxic degeneration or necrosis of the mucosa or of lymph follicles of the duodenum followed by digestion was probably the most frequent cause of acute ulceration. The source and nature of the toxin might vary widely; thus the products of tissue autolysis circulating in the blood caused degeneration in the parenchyma of various organs, and in the stomach and duodenum digestion of the devitalised tissue followed with the formation of ulcers. In two of his cases death resulted from widespread superficial burns, in one case five and in the other 12 days after the accident. Mr. Wilkie was convinced that some definite relationship existed between morbid conditions in the lower bowel and duodenal ulcer. The relationship between them was not clear, but he was inclined to think that the ulcer was due to a combined action through the blood and through the autonomic nervous system. Rössle had been struck by the frequent association of chronic appendicitis and duodenal ulcer. There was some evidence to show that toxic absorption from the colon had a definite vago-tonic influence. The periodicity of the symptoms of duodenal ulcer, the effect of worry, over-fatigue and chills, and vaso-motor disturbances in determining the onset of a fresh attack all pointed to the importance of the nervous factor in duodenal ulcer. After discussing the site of the ulcer and the sex incidence he drew the following conclusions: 1. Duodenal ulcer is a disease of frequent occurrence and one which often passes unrecognised. 2. Although as a rule readily recognised, a chronic ulcer may occasionally exist and give rise to none of the characteristic symptoms, the first evidence of such a "silent" ulcer being sometimes its perforation. 3. "Silent" duodenal ulcers are met with most frequently in the subjects of arterio-sclerosis and are found for the most part on the posterior wall. 4. Some toxic or irritative factor, usually within the abdomen and most often associated with the colon or appendix, is found in a large proportion of cases. 5. Probably many acute duodenal ulcers are primarily follicular ulcers from the breaking down of inflamed lymph follicles. 6. Whatever be the primary cause of a gastric or duodenal ulcer, spasm of the muscular coats of the viscus is an important factor in determining its chronicity. 7. The situation of the opposing ulcers on the anterior and posterior walls on the boundary zone of the areas supplied by the anterior and posterior branches of the supra-duodenal artery suggests that a common vascular deficiency, rather than a contact infection, accounts for the peculiar tendency to chronicity and recurrence. 8. This vascular deficiency may be due to arterio-sclerosis, but probably it is usually due to spasm of the muscular coats of the duodenum, induced by a slight local anæmia consequent on strain on the supraduodenal vessels, this muscular spasm being favoured by the increased vago-tonus and the irritable condition of the autonomic nervous system which exist in such cases. 9. The sex incidence of duodenal ulcer is to be explained on anatomical grounds. The relatively high pylorus and short fixed duodenum of the male allow of its vascular supporting ligament, the hepato-duodenal ligament, being exposed to strain, which in the female with her relatively low pylorus and lax duodenum is borne by the left border of the gastro-hepatic omentum and lesser curvature of the stomach. 10. The fixity of the male duodenum further predisposes to kinking at the first duodenal angle, and thus to an unduly long exposure of its first part to the acid chyme from the stomach.—Professor CAIRD said that the late Professor Hamilton, of Aberdeen, believed that there was no relation between burns and duodenal ulcers, and personally he had found no such association.—Professor WILLIAM RUSSELL alluded to the relation which existed between conditions in the lower part of the intestinal tract and duodenal ulcer. He was glad to know that Mr. Wilkie did not believe in the view of embolism as a cause of duodenal ulcer. He had taught for long that local spasm caused anæmia and this led to acute erosion. Both duodenal and gastric ulcers were very frequently associated with hyperchlorhydria. Duodenal ulcer was very difficult to diagnose if there was hyperchlorhydria present, and one ought never to diagnose it unless there was melæna or occult blood present.—Professor ALEXIS THOMSON thought we should be chary in accepting the theory of the bands in connexion with the stomach and duodenum as causal agents as well as about the condition of the lower bowel. The toxic factors which underlay the production of appendicitis might be the cause of duodenal ulcer also. The stasis of the bowel in women rather was antagonistic to the sex relationship of the disease, and the ulcer was often present in young men who had no intestinal stasis.—Dr. D. CHALMERS WATSON, Mr. J. WHEELER DOWDEN, and Mr. J. W. STRUTHERS also took part in the discussion.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF PATHOLOGY.

Wassermann Reaction.

A MEETING of this section was held on May 1st, Dr. J. B. COLEMAN, C.M.G., the President, being in the chair.

Professor E. J. MCWEENEY read a communication on Experiences with the Wassermann Reaction. He had invariably carried out the original technique with the exception that he used a non-specific antigen and adopted the quantities and general procedure laid down by M'Intosh and Fildes in their valuable text-book on syphilis. The number of cases he had tested so far was 240, of which 182 were available for statistics. From the Lock Hospital he had examined 54, of which 47 were undoubtedly

syphilitic. The percentage of cases in which the reaction gave results in accordance with the clinical aspect was 91·3. Of the 7 non-syphilitic cases, all reacted negatively to the test. From the Mater Misericordiæ Hospital 46 cases were available, of which 37, or nearly 85 per cent., gave reactions in accordance with the clinical aspect. From the Richmond Asylum he had tested the serum of 35 cases, of which 26 were definitely diagnosed as general paralysis, 5 were looked upon as certainly not of that nature, and 4 were regarded as suspicious or doubtful. Of the 26 clinically certain cases, 19, or 74 per cent., gave a strongly positive reaction, 4 were negative, and 3 were doubtful to the test. For reasons mentioned two of the latter ought to be regarded as positive, raising the number of accordant positive results to 81 per cent. All the cases (5) in which general paralysis was clinically excluded gave a negative result. The speaker had also examined a number of cerebro-spinal fluids, and found a positive reaction in nearly all that were diagnosed as general paralysis of the insane. With regard to the globulin-content of these fluids he had found the Nonne-Apelt, "Phase I.," test the most satisfactory, provided a time limit of three minutes was observed, and the fluid was mixed with the ammonium sulphate, not superposed, as recommended by Ross and Jones. With the Noguchi (butyric acid) method he had obtained, too, many positive results. Out of 49 cases sent in from various hospitals and private practitioners there were only four in which the result of the Wassermann test was not reconcilable with the clinical aspect. The speaker then described the technique. He mentioned the several pitfalls which the method presented for the inexperienced operator, more especially that due to "cutting the hæmolytic system too fine," with the result that complete hæmolysis did not occur in the tube without antigen. He discussed the value of various antigens, and stated that in his experience alcoholic extract of sheep's heart, without added cholesterin, worked quite well, and kept almost indefinitely. He drew attention to the superior delicacy of the method of Browning, Cruickshank, and M'Kenzie, which had given a positive result in a congenitally syphilitic child, when the ordinary technique was negative. He referred to comparative tests which he had done with active serum by Stern's and Fleming's methods, and also with the precipitation methods of Elias and Neubauer, and of Herman and Perutz, but would not place implicit reliance on any of them in the absence of a proper Wassermann test. He drew attention to the great prevalence of syphilis amongst imbecile children, and also amongst gynæcological out-patients, as shown by the Wassermann test in the hands of members of the Glasgow school, and stated that one of his objects in coming forward with the paper was to point out the necessity for systematic investigation on similar lines amongst the same classes in Ireland.

Dr. J. T. WIGHAM said that the experience in the Trinity College Laboratory did not enable him to make any more definite pronouncement on the subject than that made in the paper. He commenced with Birt's method, which he considered the easiest, and which had been found in the army to give satisfactory results. The method differed essentially from the original; the antigen was very much the same as in the original, but the complement was the patient's complement, the cells were the patient's cells, and the amboceptor was from the rabbit; hence the results were not so certain as if the original reaction was used. The Fleming reaction had now been adopted in his laboratory. As it was a method in which inactivated serum was not used it had been found to be too sensitive in some respects, giving a positive reaction in some cases where the original method would have given a negative; it had, however, the advantage that it did not require much blood. He referred to the difficulty of getting practitioners to send a sufficient quantity of blood. He considered that in any case in which human complement was used it was necessary to leave the serum on the clot. Having latterly controlled results with the original Wassermann test, working with two antigens, it was found that Fleming's method was on the whole satisfactory.

Dr. ADRIAN STOKES said he considered that the results of treatment were still better shown by the Wassermann test. Patients were seen with secondary syphilis giving a strong positive reaction, and after three or four weeks' treatment the reaction might be observed shading off. He considered that a negative reaction was the ultimate proof as to whether a patient had any active syphilis in his body or not, and no patient who ever had syphilis should be satisfied until he gave a negative reaction, and although tertiary cases might take an enormous amount of salvarsan before a negative reaction was produced, yet he thought it was worth trying to bring it about. Referring to deafness and blindness, the result of syphilis, he thought that in some such cases this was brought about by syphilitic neuritis, and suggested the advantage of lumbar puncture. As to the question of heating the serum, he thought that the reason why it was important to do this was that it produced destruction of the non-specific fixing bodies. He suggested that it was unnecessary to kill the guinea-pigs. He had succeeded in getting as much as 10 c.c. from the heart without killing the animal, and after 20 days' time it gave a complement as good as at the beginning. In his own tests he always titrated the complement and the antigen, and having done this, two hæmolytic doses of each were used. Two different antigens were used also, one more active than the other, which helped in the reading. The tendency to use more than two antigens was on the increase. He pointed out that the cerebro-spinal fluid tests depended upon the quantities used. If large quantities were taken there was more likelihood of getting reaction than if smaller quantities were used. He was at present using 0·1 serum for diagnosis, and 0·5, 0·4, 0·3, 0·2, 0·1 of cerebro-spinal fluid.

Mr. H. MOORE said it was not sufficient to treat a patient until he gave a negative reaction, and then tell him that he was cured. The patient should come back several times at intervals and have the test done. In cases where secondary syphilis was well established a patient might give a negative reaction, but if tests were done every two or three months it would be generally found that within one year he would give a positive reaction again. This he considered the time to commence a second course, and in his opinion if a second course was then carried out it was improbable that a recurrence would take place. In many of the cases of secondary syphilis that he had seen a positive reaction was found again in about nine months, and when the patients had got another course they then remained negative. He referred to the experience of negative reactions in cases of tertiary syphilitic lesions of bone.

Dr. W. R. DAWSON said that although it had recently been discovered that in cases of mental defect some 66 per cent. gave a positive reaction in England, he did not think that a similar state of things existed in Ireland. He thought it would be found that, except in a few of the larger towns, there was very little syphilis amongst the mental cases in Ireland, and pointed out that there were very few paralytic symptoms. He was fairly convinced that throughout Ireland syphilis had very little to do with insanity or any other mental defect.

Professor MCWEENEY, in reply, said that he did not wish to take up the position of denying that simplified methods, such as Birt's and Fleming's, had no value, but he leaned to the view that the original technique should be adhered to whenever possible. Using a Fleming technique with several strengths of antigen it seemed to him as complicated as the original method. He would feel anxious about giving a diagnosis on the result of any simplified method. He agreed that it was advisable that lumbar puncture should be done more frequently in nervous cases. He agreed with the remarks of Dr. Dawson that the examination of mental or nervous patients in Ireland would not reveal any great prevalence of syphilis, but he would nevertheless like to have this placed beyond doubt. The statement regarding tertiary bone lesions giving a negative reaction agreed with his experience.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.—A meeting of the Northern and Midland Division of this association was held on April 30th at the West Riding Asylum, Menston.—Dr. S. Edgerley, who presided, read an interesting paper on the Alleged Increase of Insanity, taking a very optimistic view of the subject. He stated that his paper only dealt with the north part of the West Riding, the area, consisting of manufacturing cities and towns and agricultural districts, from which Menston Asylum draws its patients. Statistically the West Riding occupied a very favourable position as regarded its sanity. The first point to be settled was: What was meant by an

increase in insanity? It might signify an increase in the total number resident, an increase in the number of admissions, or an increase in the annual number of first admissions—the last would appear to be the really important aspect of the question. Are people becoming more liable to insanity? had also to be considered. He thought the total increase in the asylum population depended on the relation of the output to the intake; they would therefore not see a reduction until they could reduce the intake and increase the output. Can anything be done to diminish the incidence of insanity? Four great causes were being grappled with—poverty, ill-health, excessive indulgence in alcohol, and preventable contagious diseases. He thought it was possible to exaggerate the influence of hereditary predisposition. His conclusion was that in that part of the West Riding, whatever bald statistics might appear to show, insanity was not in the real sense increasing; indeed, there was every reason to hope and expect that it would decrease.—An interesting discussion followed in which many of the members took part. The main points were: Was epilepsy increasing or decreasing? Did the decreased infantile mortality mean an increase of insanity, or were we saving children for them to become insane later? One member considered that the tendency was for insanity to increase, in view of the reduced number of children more especially in middle-class families.—Dr. Bedford Pierce then opened a discussion on the Treatment of Incipient Insanity. This, he said, had to be considered under two main heads—viz., in the case of those able to pay, and those unable to pay for their treatment. He thought that some new kind of institution would be required; that cliniques attached to hospitals would be advisable; that coöperation of hospitals, boards of guardians, &c., would be necessary. Institutions would have to be equipped with up-to-date methods of treatment, and suitable means of employment and recreation would have to be found for the patients. How to carry out all this would be difficult, as the capital expenditure would be a serious item, and then, would the public support it? He, however, thought that something should be done in the way of erecting suitable sanatoriums for the treatment of incipient cases.—Many interesting points were brought out in the discussion which followed.—A vote of thanks was accorded to Dr. Edgerley for his hospitality and for presiding.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on April 30th, Mr. W. S. Kerr, the President, being in the chair.—Dr. R. Gordon opened a discussion on Malingering under the Insurance Act. He said that many medical men seemed to think that there was practically no such malingering, but Friendly Society and insurance officials asserted that it was rampant. It certainly looked as though there was a considerable amount, for a Departmental Committee had been appointed to inquire into it. Under the old Friendly Society system a certain amount of malingering existed, but as every man took a personal interest in his lodge or society anyone found shamming was very soon brought before the club. At that time 6,000,000 persons belonged to societies. Now over 14,000,000 were insured, and in the competition for members many thousands of weakly men and women were enrolled who really should have been deposit contributors. Many of these were of poor physique and far below the normal standard of health, and as unearned increment had a fatal fascination for most people, it was not surprising that many took advantage of the slightest illness to "go on the State." Then many men, in addition to being insured, also belonged to one or more clubs, and were actually drawing more money than when working, so that the desire to return to work was not so great as it would otherwise be. The sickness and disablement figures on which the Act was based varied from 0·92 week per annum at 16 years of age to 6·31 at 65—the period covered by the Act of 1911. In one of the large societies, consisting of men between 16 and 65 years of age, in Sheffield, and comprising steel workers and labourers, cutlers, grinders, and silver workers, 32·93 per cent. were ill. The average duration in proportion to the whole number was 6·87 days, and the amount paid was 9*s.* 6·59*d.* This compared very favourably with the actuarial allowance of 9*s.* 6½*d.* Of men from 65 to 70 years, 41·32 per cent. were ill for an average period of 13·26 days, and the amount paid was 11*s.* 7·16*d.* Of women, 37·104 were ill for an average period of 10·08 days, and the amount paid was 10*s.* 7·72*d.*, which was very much more than the actuarial allowance of 6*s.* 11½*d.* These figures were also borne out by a large industrial insurance society, where the men received 8*s.* 0·009*d.*, and the women 11*s.* 0·205*d.*; also by the Manchester Unity, where the actual payments to men were £196,628, and the actuarial estimate £213,196. For women the amount paid was £48,303, the estimate being £42,292. These figures, Dr. Gordon said, went to show that there was very little malingering among men, and that if the giving of certificates was more strictly regulated there would be less still. So far as women were concerned the figures showed that the actuarial estimate was entirely wrong, and that there was much more sickness among them than was estimated.—In the discussion which followed there was a consensus of opinion that there is very little malingering under the present Act.

HARVEIAN SOCIETY.—A meeting of this society was held on April 30th, at the Stafford Rooms, Tichborne-street, W., Mr. J. Jackson Clarke, the President, being in the chair.—Mr. Ernest Clarke read a paper on Some Errors in Diagnosis and Treatment in Ophthalmic Practice. He first spoke of epiphora, stating that mistakes were frequently made by omitting to examine the position of the lower punctum. The slight ectropion which often appeared after middle life caused the punctum to look up, and made it incapable of "sucking up" the tears. The specific for this was slitting up the canaliculus, putting in a nail-head style, and making a gutter in the ocular lip for it to lie in. He recommended West's operation for lacrymal obstruction in bad cases of chronic dacryocystitis. He spoke of the frequency with which early iritis, cyclitis, and small corneal abrasions were missed, and dwelt upon the importance of alimentary toxæmia as the cause of iritis. Eye strain was generally due to a small amount of astigmatism, and might be the cause of almost any functional nerve trouble. It should be insisted upon that the examination should be made with the aid of a cycloplegic. It was a most dangerous and useless placebo to order + ·50 sph. for children to use for school work. If astigmatism were present glasses should be worn always. Myopia should be corrected fully except in very high degrees. He advocated invisible bi-focal glasses for cases of presbyopia complicated by other errors. From an examination of over 3000 patients after correction of their refractive error he proved that the average accommodation was from 1 to 1½ dioptres higher than was stated by Donders 50 years ago. He again emphasised the importance of intestinal stasis as a cause of presbyopia.

NORTH LONDON MEDICAL AND CHIRURGICAL SOCIETY.—The last meeting of the session of this society was held in the board room of the Great Northern Central Hospital on May 14th, Dr. T. Wilson Parry, the President, being in the chair. The election of officers for the next session took place, Dr. Ernest H. Shaw being elected President.—Dr. Parry then gave his presidential address entitled "Prehistoric Man and his Early Efforts to Combat Disease." He first sketched a picture of prehistoric man in his different stages from neolithic back to palæolithic and pre-palæolithic times. To this last-mentioned period must be attributed man's "beginning." Animals endeavoured to cure themselves when confronted with illness or injury; primitive man did likewise, only always a little more. Like an animal, primitive man would first of all lick his wounds, which after all was only a combination of modern fomentation and massage. Demonology was the origin of trephining. Dr. Parry gave details, from some 19 experiments he had performed on recent and dry skulls, how trephining was done in the Stone Age. This paper will shortly appear in a summarised form with illustrations in THE LANCET. It was profusely illustrated by lantern slides, and prehistoric implements and aboriginal trephined skulls were exhibited.

UNIVERSITY OF CAMBRIDGE.—The new School of Physiology erected by the Worshipful Company of Drapers will be declared open by H.R.H. Prince Arthur of Connaught at 3.30 P.M. on Tuesday, June 9th. Invitations to an "At Home" in the new building have been issued by Professor and Mrs. Langley.

Reviews and Notices of Books.

The British Journal of Surgery.

Volume I. 1913–14. With 486 figures, 4 portraits, and 9 coloured illustrations. Bristol: John Wright and Son. Pp. 748. Price 25*s*.

THIS new quarterly periodical, devoted entirely to British surgery, was noticed in these columns on its first appearance, and now the completed first year's volume lies before us. It is managed by an editorial committee of 35 surgeons, including representatives from all the great teaching centres of the United Kingdom and from the principal colonies. This committee, under the chairmanship of Sir Berkeley Moynihan, includes many of the leaders of British surgery, as well as a sufficient number of the younger men to ensure authoritative editing on the one hand and the energetic exploitation of new ideas on the other. Short notes of the work of a great teacher of surgery accompanied by a portrait appear in each number, and the present volume deals with Lord Lister, John Hunter, Abernethy, and Sir Astley Cooper. These articles, the letterpress of which is perhaps too brief, serve as a link between the progressive surgery of to-day and the pioneers of the past, whose work has laid the foundation upon which we are now building.

The greater part of the volume is occupied by original articles on surgical subjects, the majority being of a clinical character and the rest experimental and pathological. Among the most important of these may be mentioned the following: Renal Varix as a Cause of Symptomless Hæmaturia, by David Newman; the Influence of the First Costal Cartilage on the Incidence of Apical Phthisis, by Morriston Davies; Rupture of the Crucial Ligaments and Fractures of the Tibial Spine, by Robert Jones and Alwyne Smith; the Surgery of the Spleen, by Sir John Bland-Sutton; Intramural Extension of Rectal Cancer, by Monsarratt and Williams; Sellar Decompression, by Thorburn; an exhaustive article on Cleft Palate, by Goyder; the Congenital Enlargement of the Colon and Rectum, by Barrington-Ward; Radio-ulnar Synostosis, by Wilkie; a clinical study of cases illustrating the Growth and Repair of Bones, by Rutherford Morison; Experiences of Splenectomy in the Tropical Diseases of Egypt, by Owen Richards; an experimental study of 100 cases of Fracture of the Long Bones in Rabbits and Cats treated by Operative Methods, by Hey Groves; a study of Congenital Elevation of the Scapula, by Fairbank; an article on Massive Collapse of the Lung, by Pasteur; Typhoid Spine, by Elkin and Halpenny; Transplantation of the Fibula, by Bond; papers on Osteomyelitis, by Pringle and Evans; and a full account of Loose Bodies in the Knee-joint, by Anglin Whitelock.

The mere enumeration of these subjects will serve to indicate how wide has been the scope of the articles. Another series of articles of great value is that devoted to the critical review of subjects of theoretical and practical importance. In most of these articles the author has in addition to a review of the work of others made a substantial original contribution of his own observations.

A description of the methods employed by great masters of their craft is supplied in the form of visits to surgical clinics at home or abroad, and in this series some aspects of the work of Macewen, Tuffier, Lane, Lambotte, Horsley, Rutherford Morison, and Garré are noted with that fidelity in detail which conveys an accurate idea of the technique employed. One feature of special interest and novelty is the publication of "instructive mistakes." Short notes of rare or obscure cases also appear in each issue.

The journal as a whole appears to us to have removed the reproach that we have no British journal comparable to the annals, zeitschrifts, archivs, and revues of surgery which for many years past have formed the main organs for the publication of surgical research in foreign countries. Such a journal, managed and controlled by a large body of clinical and teaching surgeons, must do much towards bringing about a coöperation of workers in surgery in the advancement of their art. It provides, moreover, a suitable vehicle for the publication of special articles on research and experiment the nature of which makes them unsuitable for general medical literature.

In the matters of printing, illustration, and general get-up the new journal has been very well served, and if the present standard of originality and literary merit can be maintained its continued success is assured.

Acute General Miliary Tuberculosis.

By Professor Dr. G. CORNET. Translated by Mr. F. S. TINKER. London: John Bale, Sons, and Danielsson, Limited. Pp. vi.–107. Price 6*s*. net.

IN this small work, which has been translated in a pleasing manner by Mr. Tinker, Professor Cornet gives a summary of our present knowledge of general acute miliary tuberculosis. He considers that the breaking down of vascular tubercles which can be found in the walls of the big vessels fulfils all the conditions necessary for the origin of miliary tuberculosis. He makes the important statement that there is no proof of the existence of virulent bacilli in the blood of the phthisical patient or of the assumption that tubercle bacilli can multiply in the blood stream. He discusses the origin of the vascular tubercle, the methods of dissemination, and the causes thereof.

Chapter II. deals with pathological anatomy, and especially with findings of the vascular tubercles in the intima of the vein; also with the important question of mixed infections. Chapter III. deals with the symptoms and physical signs, and the author points out that the clinical picture is a much wider one than the anatomical picture. He gives illustrative cases showing that the disease is not always fatal. Though these non-fatal cases are rare, one in particular is beyond doubt, inasmuch as tubercle bacilli were found in the cerebro-spinal fluid, yet the case recovered. Discussing the difficulties and often the impossibility of making a certain diagnosis, the author deals with the more specific means to be adopted. Concerning the finding of bacilli in the blood, we agree that there is nothing definite known, and even acid-fast bacilli from distilled water have been mistaken for tubercle bacilli. He mentions the more trustworthy methods of finding the bacilli in the cerebro-spinal fluid and tubercles in the choroid, though an interval of one or two weeks must elapse after dissemination before these grow to macroscopic size. Such methods as diazo reaction, the viscosity of the blood, and the "complement-deviation method" are merely mentioned, and perhaps this is all that they at present deserve. The author considers that an X ray picture may often give important information as far as the

lungs are concerned. An extensive bibliography completes the work.

We have found this book most readable and can recommend it as a summary of the subject with which it deals.

Biology, General and Medical.

By JOSEPH MCFARLAND, M.D., Professor of Pathology and Bacteriology, Medico-Chirurgical College of Philadelphia. Second edition, thoroughly revised. With 160 illustrations. London and Philadelphia: W. B. Saunders Company. 1913. Pp. 457. Price 7*s.* 6*d.* net.

IN reviewing this book in THE LANCET of Feb. 4th, 1911, on its first appearance, we were enabled to congratulate Professor McFarland on the admirable manner in which he had carried out his aim in providing first an excellent summary of the elements of biology for general readers, and, secondly, in the attention devoted to the more specialised medical aspects of the subject, so as to offer to general practitioners of medicine a broad but accurate survey of various fields of new knowledge. The former object naturally remains much *in statu quo;* but as regards the latter the present volume introduces such new matters as will bring the contents up to date and increase the usefulness of the book for medical readers particularly. The second half of the book, beginning with the chapter on ontogenesis, which is followed by chapters on conformity to type, divergence, structural relationship, blood relationship, parasitism, infection and immunity, mutilation and regeneration, grafting, senescence, decay, and death, gives a just summary of contending theories in language that will tend to afford a good bird's-eye view of the present status of knowledge and opinion. We note a slight blemish on p. 226, repeated elsewhere, where "fœti" is used as the plural of fœtus. Fœtus is, of course, fourth declension, and the plural, therefore, is also fœtus. But in English why not fœtuses?

The book is an admirable one, clearly written so as to be intelligible to those without much preliminary biological training, and well printed and got up.

A Practical Treatise on Medical Diagnosis for Students and Physicians.

By J. H. MUSSER. Sixth edition, revised by J. H. MUSSER, Jun. With 196 engravings and 27 coloured plates. London: H. Kimpton. 1914. Pp. 794. Price 25*s.* net.

THE sixth edition of the well-known treatise on medical diagnosis by the late Dr. John H. Musser has been brought out by his son, and fully maintains the high standard of excellence set by its predecessors. It has been necessary to make considerable additions to the last edition, which came out nine years ago, with the result that the book has been practically rewritten, while several of its sections have been materially shortened in order to keep the volume within reasonable bounds of size. The book is divided into two parts. The first of these deals with general diagnosis and contains four sections in which diagnosis is considered subjectively, objectively, from the physical point of view, and from the point of view of the laboratory. Part II., occupying the last 300 pages of the book, is devoted to the special diagnosis of the disorders of the various parts and systems of the body.

To point out the merits of this time-honoured text-book, the friend of many generations of medical students in America, may seem to be unnecessary. It is the work of an experienced practical physician, well arranged and clearly written, not encumbered by an abundance of references to the literature or to methods of physical examination whose only merit is their novelty. It gives an adequate account of the laboratory methods of diagnosis that are within general reach. The illustrations are well chosen, and there is a fairly good index at the end of the volume.

It may be cordially recommended to medical students and practitioners in search of a trustworthy book on medical diagnosis.

Technik der speziellen klinischen Untersuchungsmethoden.

Herausgegeben von TH. BRUGSCH und A. SCHITTENHELM. Part I. With 359 illustrations. Berlin: Urban und Schwarzenberg. 1914. Pp. 522. Price, paper, 36 marks per part.

THIS is the first volume of a large text-book on the technique of special clinical methods of investigation by many authors. It contains seven sections; the first of these, under the misnomer "hæmodynamics," devotes four of its five subsections to problems of hæmostatics. The fourth section gives a good account of German X ray methods; the fifth and sixth sections deal with bacteriological and histological methods of diagnosis generally; while the last section gives some account of various methods of optical investigation—polarimetry, colorimetry, and the like.

The book is well illustrated. It is not immediately apparent, perhaps, for what class of readers it has been written; for while it gives a general account of the increasing number of special methods of clinical investigation, it often fails to describe them with detail sufficient to enable a reader to give them a trial. It should, however, be of service in many clinical laboratories.

LIBRARY TABLE.

Problems of School Hygiene. Being a Report of the First Conference of Scottish School Medical Officers. Edited by W. LESLIE MACKENZIE, M.A., M.D. Aberd., LL.D.; and LEWIS D. CRUICKSHANK, M.D. Aberd., D.P.H. Edinburgh and London: W. Hodge and Co. 1914. Pp. 112. Price 2*s.* 6*d.*—The conference recorded in this volume took place on May 1st and 2nd, 1913, in Edinburgh, and was called at the instance of the officers of the Scotch Education Department. The interest of the conference will lie for the non-Scottish reader partly in its accentuation of the differences between England and Scotland, and partly in its full contribution to the discussion of physical training. In the field of medical inspection and in that of the segregation and special treatment of definite classes of defective children Scotland is, generally speaking, behind England. But there are some notable exceptions, and work on deaf children is being done at Glasgow of a particularly thorough character, and the holiday home provision for children at Edinburgh is very useful. On the physical training side of education, however, Scotland is giving a very definite lead through the instrumentality of the Dunfermline College of Hygiene and Physical Training. The work is of a very high standard, and in its effects may do as much to change the face

of the school curriculum as will the application of open-air school ideas. The exactitude of the physical training work may be gauged from a summary of the more important points demanded from a student wishing to train as a teacher of this subject: "Age 18, height 5 ft. 4½ in., weight 9 st. Organs generally sound (these are specified in detail, of course, in the report), voice refined and of good round tone. Carriage and appearance good, not coarsely muscular. Evidence of good morals, self-discipline, general refinement, and temperamental fitness. The intellectual type preferred to the crudely muscular." One wonders if the time will come when analogous characteristics and qualities will be demanded from the ordinary teacher, and even, perhaps, from medical inspectors of schools. The speculation at least opens up an interesting vista into the future.

The Dietetic Treatment of Diabetes. By B. D. BASU, Major, I.M.S., retired. Fourth edition. Allahabad: Panini Office. 1913. Pp. 52. Price Rs. 1.8, or 2*s*.—This little book has been out of print for some time, but the author has not found it necessary to make any considerable alterations in the present issue. A summary of the statements of various authorities on the subject is given, and the author concludes with his own recommendations as to dietary, in which milk and cocoanut (i.e., coco) preparations figure largely, but exact directions as to quantity are not provided. The restriction, if not the total withdrawal, of meat, alcohol, tea, coffee, and cocoa (i.e., cacao) is advised.

How to Treat by Suggestion with and without Hypnosis. By EDWIN L. ASH, M.D. Lond. London: Mills and Boon, Limited. 1914. Pp. 104. Price 1*s*. net.—This is a little book detailing practical methods of suggestion, simple and hypnotic, intended, according to the author's prefatory note, solely for the medical profession. There are a few illustrative cases, and remarks on special indications, kinds of suggestions, and so on. In addition are reprinted four papers by the author from THE LANCET and other medical journals.

MISCELLANEOUS VOLUMES.

IN *Building By-Laws in Rural Districts* (London: P. S. King and Son. 1914. Pp. 66. Price, cloth, 1*s*. 6*d*. net; paper 1*s*. net) Sir WILLIAM CHANCE has had reprinted the texto f a Bill which passed through the House of Lords without opposition in 1906 for the reform of the building by-laws in rural districts, in the hope that the book may be the means of interesting persons concerned and of obtaining support for the British Constitution Association in its effort to get the Bill re-introduced into Parliament and passed into law. The Bill is accompanied by a revised code of building by-laws for rural districts, designed to be an improvement upon the existing rural code. The obtaining of the most practical code possible for rural districts, in which building was so long hampered by restrictions drafted to meet the requirements of urban districts, is a very important matter if any substantial progress is ever to be made in the provision of healthy dwellings for the rural working population, and the name alone of Sir William Chance in connexion with such a subject should secure the attention of all interested in it. The arrangement adopted enables easy comparison to be made between the proposed model by-laws and those of the existing code which are intended to be altered or omitted, and a paper on the whole subject read by Sir William Chance before the British Constitution Association is printed by way of introduction.——The Warburton Lectures of the Manchester University for 1914 consist of two *Lectures on Housing* (Manchester: At the University Press. 1914. Pp. 70) delivered respectively by Mr. B. SEEBOHM ROWNTREE and Professor A. C. PIGOU. Mr. Rowntree discusses the permanent causes of shortage, and suggests a survey of housing conditions, expansion of the minimum wage policy, the "decasualising" of labour, compulsory town planning with restriction of number of houses to the acre, increased transit facilities and improved powers for the acquisition of land, the free lending of money for building to public utility societies, the making compulsory of satisfactory housing in towns, and relief of the rates by the National Exchequer conditionally on the fulfilment by local authorities of the statutory duties. Professor Pigou holds it essential that some minimum standard of factory conditions, leisure, dwelling accommodation, education, medical treatment, and supply of wholesome food and clothing should be established, but varying in different communities as they are rich or poor, so that the lapse below this standard in any one of the conditions should call for intervention by the public authorities. The future erection of insanitary houses should be forbidden, and where such exist they should be amended or destroyed; overcrowding of rooms should be prevented by direct legislation, a statutory definition of minimum cubic space being allotted per head—he suggests 400 cubic feet, which he would reduce with reluctance to half in the case of children under ten. He cites the example of the late Miss Octavia Hill as regards the value of personal influence of landlord over tenant. He realises the difficulty of condemning unfit houses as one can prohibit the distribution of unfit food; the hardship of the latter is spread over the community, while that of the former falls exclusively on individuals. He discusses somewhat doubtfully the minimum wage, but urges State aid for the housing of the poor, a mode of bounty which should not depend directly on, or vary inversely with, the wages paid to the recipient—the bad feature of the Poor-law—but should vary directly with the quantity of the purchases.

Trials for murder often arouse intense excitement at the time among the large section of the public which revels in horrors; and however unwholesome this taste may be, the newspapers would be less than human if they failed to gratify it to the full, so long as the issue of life and death for the accused person remains in the balance. But every murder trial provides also an instructive study to the criminologist and the student of criminal law, and in almost all such cases there is something of permanent medical and scientific interest. These aspects may be overlaid at the moment by the more gruesome and sensational features, which alone appeal to the popular imagination; but in the long run they usually determine whether any given *cause célèbre* shall fade into forgetfulness as a nine days' horror or whether it shall be re-enacted some years later before the limited audience which supports the issue of some notable trial series. The trial of Frederick Henry Seddon and his wife for the murder by arsenic of Miss Barrow certainly possessed enough medico-legal and scientific interest to justify its inclusion in such a series. Nevertheless, the issue of Mr. FILSON YOUNG'S *Trial of the Seddons* (Edinburgh: William Hodge and Co. 1914. Pp. 420. Price 5*s*.) within two years of the Old Bailey proceedings, while the matter is still fresh in the public mind, rather suggests that a wider demand is expected for this volume than for some of its predecessors—an impression which is heightened by the editor's general treatment of his subject. Some of the medical and scientific evidence comes in for criticism of a not very authoritative kind, but this aspect of the trial was considered in a leading article in THE LANCET at the time, and no new light is now thrown upon it. Although he is clearly satisfied that Seddon was a repulsive creature quite capable of murder, Mr. Young seems dissatisfied with the severe methods of the prosecution and inclined to think that on the evidence a verdict should have been returned in favour of the male prisoner as well as of his wife. He maintains that there was room for reasonable doubt, and implies that Seddon should have been given the benefit of it. This view, which was not shared by the Court of Criminal Appeal, colours the able and dramatic introduction and is seen here and there in footnotes.——In *Women and Crime* (London: T. Werner Laurie. 1914. Pp. 303. Price 6*s*.) Mr. HARGRAVE L. ADAM shows how in some human beings gifted with their full complement of senses the will to do evil gets the upper hand. He gives a somewhat sketchy account of notorious woman criminals, such

as Maria Manning, Jeanne Danilloff (afterwards Weiss), Mrs. Goold, Gabrielle Bompard, Mrs. Dyer, the amazing Madame Humbert, and others. He is of opinion that secret poisoning by women is of far greater extent than is generally known, and says that he personally "knows several women who encompassed the deaths of their husbands against whom no steps were taken, because no steps could be taken." It is not clear whether Mr. Adam means that these ladies poisoned their husbands or removed them in some other way.

JOURNALS AND MAGAZINES.

The Journal of Physiology. Edited by J. N. LANGLEY, Sc.D., F.R.S. Vol. XLVIII., No. 1. March 31st, 1914. Cambridge University Press. Pp. 108. Price 6*s.* 6*d.*—Douglas Cow in an article on Diuresis points out that there is a certain discrepancy between the results recorded by different observers of the diuretic effects of water and saline solutions. Most observers have found that the intravenous injection of saline solutions is followed by an increase in diuresis, no matter whether the solutions were hypotonic, isotonic, or hypertonic. Other observers experimenting also on unæsthetised dogs obtained different results. It is agreed, however, that water given by the mouth produces an increase in diuresis, but the result of subcutaneous or intravenous injections is not so certain. The author has continued his researches on this subject, using (1) unanæsthetised dogs, and (2) cats anæsthetised with urethane. For dogs (female) a catheter was used, and the 10 minutes' output of urine ascertained by weighing. In unanæsthetised animals the diuretic action of a substance may be masked by reflex or other causes. The mucous membrane of the stomach, duodenum, jejunum, and ileum contains a diuretic substance, that from the duodenum being the most active. This diuretic substance can be extracted in water or salt solution either at room temperature or boiling, and the extraction is independent of the presence of acid, but the most active preparations have been extracted in acidulated salt solution at room temperature. These extracts are not destroyed by boiling, but they lose their activity on keeping. Intravenous injections of small amounts of normal saline solutions produce an immediate increase in diuresis; this increase is but transient, and is very small in amount. Intravenous injection of small amounts of extracts of gastro-intestinal mucous membrane produce (*a*) an immediate increase in diuresis, similar to that produced by injections of saline; and (*b*) a delayed increase, which is considerable in amount and comparable to the increase produced by giving water by the mouth to normal animals. This delayed increase is not produced by intravenous injections of physiological amounts of saline. The author is of opinion that there is sufficient evidence that the physiological process of diuresis depends not only on the integrity of the kidneys and circulatory system and on the introduction of a certain quantity of fluid into the organism, but also on the presence of a specific substance contained in the gastro-intestinal mucous membrane, which substance is, presumably, taken up by water during the process of absorption from the gastro-intestinal tract.—On the Nature of the Fundamental Activity of the Nerve Centres, together with an Analysis of the Conditioning of Rhythmic Activity in Progression, and a Theory of the Evolution of Function in the Nervous System, by T. Graham Brown. This is an important contribution to which we have already alluded in THE LANCET (May 2nd, 1914, p. 1267). At the present time the "spinal reflex" is generally regarded as the "functional unit" of the nervous system. The author does not subscribe to this doctrine. He has studied more especially the progressive movements of the limbs shown by cats in a state of greater or less marked narcosis—i.e., under the influence of a general anæsthetic. The conclusion is arrived at that the experiments suggest also that the functional unit is the activity of the independent efferent neurone; they further suggest that the primitive activity of the nervous system is seen in such rhythmic acts as progression and respiration. The spinal reflex is "of the nature of a distorted 'beat'" of the rhythmic progression phenomenon.—Hyperpnœa as a Result of Pain and Ether in Man, by A. L. Meyer. Experiments on animals have shown that hyperpnœa incident to prolonged stimulation of sensory nerves is followed by apnœa, and in many cases the dogs died of cardiac failure. Henderson has shown experimentally that ether is capable of producing a hyperpnœa and a subsequent fatal apnœa. The same result may be brought about by excessive artificial respiration. The author experimented on himself, producing a condition of "pain hyperpnœa." A clamp was placed on the end of the little finger and screwed up so as to produce a blue nail in two or three instances and a pain such as might be caused by a severe paronychia. The clamp was kept on from one to three minutes. Under such conditions a hyperpnœa is produced that can easily be measured. The alveolar CO_2 is diminished, and the respiratory quotient increased. To determine the effect of the incipient stage of etherisation on man a mixture of approximately 5 per cent. of ether and air was inhaled. In man "ether hyperpnœa" is produced in one minute when a suitable low concentration of ether is used. The amount of hyperpnœa varies in different persons, and with higher concentrations the breathing is diminished.—The Relation between the Size of the Propagated Disturbances and the Rate of Conduction in Nerve, by E. D. Adrian. The nerve was narcotised with alcohol dissolved in Ringer's fluid. It was found that the rate of conduction did not depend on the distance travelled by the disturbance, although the disturbance suffered a considerable decrement as it passed down the nerve. The rate of conduction in the narcotised area does not vary as much as 3·5 per cent. when the strength of stimulus is increased to seven times its threshold value. The author confirms the conclusion of Koike that the rate of conduction does not depend on the size of the disturbance.—The Antagonism of Curari and Nicotine in Skeletal Muscle, by J. N. Langley. The muscle was fixed in the chamber in Ringer's fluid, the fluid run off, and curari or nicotine solution added. The rectus abdominis and sartorius muscles of the frog were used. The order of study was (1) the effect of curari given before nicotine on the contraction caused by nicotine in the neural region of the muscle; (2) the effect of curari given before nicotine on the contractions caused by nicotine in the general muscle substance; (3) the effect of curari given after nicotine; (4) the effect of mixtures of curari and nicotine; and (5) the region of action. As to (5) the question is—Do or do not nicotine and curari, pilocarpine and atropine, and certain other poisons, produce their effects by acting on the nerve endings—i.e., on the terminal branches of the nerve fibre? This question is best solved by experiments on animals in which the nerve endings have degenerated. Both in the fowl and frog nicotine and curari in minimal doses produce their effects after complete degeneration of the nerve endings, and this result the author regards as satisfactory evidence that these two poisons act on something peripheral to the nerve endings—i.e., they affect a constituent of the muscle.

Schmidts Jahrbücher der In- und Ausländischen Gesamten Medizin. Herausgegeben von Professor Dr. H. LEO. Bonn: A. Marcus and E. Weber. Price 36 marks per annum in Germany; 42 marks in other countries.—The April number contains three original articles. In the first Dr. Kadner, of Dresden, gives abstracts and analyses of 63 recent contributions to various journals on the subject of the physiology and pathology of the digestive organs. Upwards of 140 cases of resection of the stomach for ulcer or carcinoma are referred to, many of them terminating in recovery. In one of these contributions Dr. Hindhede supplies evidence to the effect that unpolished rice is dietetically far superior to polished rice, and that bread made from sifted rye flour is more wholesome than white bread. In the second Dr. Robert Salus, of Prague, reviews 79 recent memoirs on the subject of senile cataract. In the third Surgeon-General Professor Widenmann, of Berlin, publishes the introductory portion—equal in length to 15 or 20 pages of THE LANCET—of a paper on Medical Experiences in the Balkan Campaigns. The remaining portion of the April number consists of about 70 large pages containing extracts from 377 contributions to periodicals, the subjects being classified under 16 headings, of which the first eight are as follows: (1) Anatomy and Embryology; (2) Physiology; (3) Physiological and Pathological Chemistry; (4) Microbiology and Serology; (5) General Pathology and Pathological Anatomy; (6) Pharmacology and Toxicology; (7) Roentgenology and Radiology; and (8) Internal Medicine.

THE LANCET.

LONDON: SATURDAY, MAY 23, 1914.

Treatment by Radium.

IN a leading article in our issue of Jan. 17th last we referred to the ever-interesting question of radium and cancer. Our remarks then were prompted by the appearance in the lay press at that time of statements which we considered to be scarcely justified by known facts and not unlikely to cause grievous disappointment to many sufferers from malignant disease. The report of the Radium Institute for the year 1913, which we publish this week, is an interesting confirmation of the attitude we took up four months ago, and in our opinion provides the strongest possible argument for the necessity of observing extreme caution regarding the value of radium in the treatment of malignant disease. A careful study of the tables gives us many interesting points for consideration. During the year 972 cases were dealt with; of these, 112 were examined but not treated. Of the remainder there were about 490 cases of malignant disease, including 111 of rodent ulcer. Of these cases of malignant disease none are stated to be actually cured, although 50 are described as apparently cured and 183 as "improved." In a number of cases the results are not yet noted, whilst others received prophylactic treatment only. At first sight the figures may seem disappointing, especially to the whole-hearted radium enthusiast, but further consideration of the report reveals much that is encouraging.

In the first place it is the sound policy of the Radium Institute to decline to treat operable cases, and this is rigidly adhered to, except under most exceptional circumstances. Radium is thus used only as a last resort, and the fact that so many of these cases can be described as "apparently cured" is highly creditable to the work of the Institute. Time alone can show if any of these satisfactory results are permanent, and not until some years have passed without fresh manifestations of the disease could even the most favourable cases be described as "cured." A further reason for the necessity for patience in accurately estimating the results attained is furnished by the following statement taken from the report: "Little or no effect appears to be exerted in the prevention of metastatic deposits, though the treatment does not, at any rate, hasten their dissemination." The action of radium being thus a purely local one, its field of usefulness must be necessarily limited, and especially so in regard to the treatment of malignant disease. At the same time the improvements in methods and technique that have taken place are extending the useful applications of radium, some of them sufficiently remarkable to call for special comment. It has been observed, for instance, that some cases in which pleurisy depended upon carcinomatous invasion of the pleura have been greatly improved by radium, and after a preliminary paracentesis the further formation of fluid has been effectually prevented. In carcinoma of the uterus again most gratifying results are being obtained, and in inoperable cases these are far in advance of those obtained by any other known medical and surgical methods. Much inferior, however, are the results in cases affecting the moist mucous membranes, especially about the mouth and throat, but even here improved methods are holding out greater hopes of success. It is a curious fact, upon which we commented previously and which is borne out in this report, that cases apparently alike respond so very differently to radium treatment, and this applies also to the same variety of tumour affecting parts that are anatomically closely related. Cases affecting the uterus, bladder, and upper portion of the rectum do better than those situated nearer the sphincters. These and many other instances tend to show how many difficulties have to be overcome and how the technique of the applications has to be studied and modified to suit constantly varying conditions. All this means much work and time for proper elucidation and serves to prove that real advancement in radium therapeutics must necessarily be slow, and that the day when we can speak of radium as a *cure* for malignant disease is still a long way off. We venture to hope that the publication of this report will do much to steady opinion on this question, not only within the medical profession, but also among the public.

Turning to other aspects of this report, it is satisfactory to see that some progress has been made in dealing with mediastinal tumours. Naturally large quantities of radium are necessary, and thick filters and long applications are the order of the day, but the results are such as give promise of benefit. It is only when we come to the treatment of the non-malignant tumours that the medical superintendent of the Institute, Mr. HAYWARD PINCH, allows himself to make use of the word "cure" regarding the result of his treatment. The number of these conditions that are easily cured by radium is now very large, and the fact that it can be used effectively in places not favourable to operation constitutes one of its greatest triumphs. Another important feature of radium that seems now to be fairly well established is the anæsthetic effect exerted by it in certain superficial conditions attended with pain or irritation. Painful keloids, pruritus, and lichenification of the skin are among those which have done well under this treatment. With regard to the efficacy of the solution of the emanation, about which so many conflicting statements have been made, this report has not very much to say. Apparently, however, the indications are that in early cases of arthritis deformans, or in

those in which the changes are periarticular, the administration of this solution yields favourable results, especially in patients under 40 years of age. Little or no improvement is to be looked for in cases in which the osseous and cartilaginous changes predominate, and the report distinctly states that much research work remains to be done before any accurate opinion can be formed as to the therapeutic value of radium emanation solution, or as to the manner in which these changes are brought about.

Sir WILLIAM RAMSAY, since the use of radium has become more general, has always recommended its application in the form of niton rather than as a salt of radium on the ground that in the latter case there is considerable risk of loss of the precious radium, while this method does not insure a continuous application, as, for example, through the night. As he points out in a paper which we publish this week, the production of niton from radium is continuous; it goes on night and day, and the radiating power of niton is 75 per cent. of that of the radium from which it is derived. Niton can be used at any moment when its "strength" is known accurately, and a curve can be sent to the user which will enable him to know exactly what he is doing when he applies the active material. Sir WILLIAM RAMSAY describes for this purpose the introduction of niton into appropriate forms of apparatus—e.g., tubes, bulbs, and hollow flat discs. The convenience and economy of the method are evident, and we agree that these practical suggestions are a further argument in favour of having a central institute where a large supply of radium is kept, and from which frequent "drawings" of niton can be made, rather than of parcelling it out in small quantities, and having to be contented either with weak doses or to wait long for a strong dose at considerable pecuniary sacrifice. In other words, the niton method of application provides for the supply of a standardised agent. Taken as a whole, the report of last year's work of the Radium Institute is a record that adds very much to accurate knowledge of the therapeutic value of radium; and the sober, judicial manner in which it is expressed will do much to inspire confidence in the future of radiotherapeutics.

The New Milk Legislation.

A NEW Milk and Dairies Bill was introduced into the House of Commons on May 12th by the President of the Local Government Board, Mr. HERBERT SAMUEL, whose speech was reported in our last issue. The text of the Bill is now available. Like its predecessors, its principal clauses are those requiring regulations to be made by the central department with regard to the inspection of cows, cowsheds, and milk-shops, the prevention of infection and contamination of milk, the mixing of milk with separated milk and other substances, and conditions of storage and transit. These regulations are to be based on an enlargement of the existing powers of local councils under the old Contagious Diseases of Animals Acts, but apparently they will in large measure be enforced by a new set of authorities—the county councils instead of the district councils—by means of a staff which, in addition to the medical officers of health, is to include veterinary officers and bacteriologists. One of the anomalies of the present position is the invasion of country districts by officers of the numerous urban authorities which have special powers under local Acts, enabling them to act at the country cowshed in the interests of the particular town which has the powers, but not to prevent the tuberculous or contaminated milk being distributed elsewhere. The Bill adopts a sound principle in making each authority responsible for the milk produced in its own area, but it also recognises the urban interest by enabling the authorities in the town to requisition action by the authorities in the country as a result of bacteriological or other sufficient evidence against the milk. Penalties are imposed on persons knowingly selling milk from diseased cows, and the medical officer of health will have powers to stop the supply of milk which is ascertained to be tuberculous. In practice it is evidently expected that the work of the local authorities under the Bill and the work under the orders relating to tuberculosis in cattle issued by the Board of Agriculture will be carried out together, and that the same veterinary officers who detect the tuberculous cows will be able to give the instructions necessary under the orders for the slaughter of the cows and for the payment of compensation, which is to be on a more liberal scale than hitherto. A clause in the Bill, which is developed in a schedule, will introduce a considerable change in the practice of dealing with adulterated milk. It has long been a disputed question whether milk should be standardised, for example, at a minimum of 3 or 3·25 per cent. of fat, if it is officially to be regarded as "genuine," or whether genuine milk may include any milk, however low in fat, provided it has not been tampered with after leaving the cow. The latter view is adopted in the Bill, and local authorities will be expected to accede to the request on the part of the milk seller to obtain samples of milk on delivery to him for comparison with the incriminated sample, and if necessary to go back to the farm. It is stated that this procedure has long been followed with success in some of the larger provincial towns, and that the trouble involved in tracing the real offender is justified by the results obtained.

The overwhelming case for national milk legislation needs no re-statement here; to readers of medical literature the occurrence of bovine tuberculosis in children and of outbreaks of infectious disease due to milk, and the relation of infantile illnesses to dirty or contaminated milk, are only too familiar, and it would be difficult to over-estimate the extent of essentially preventable disease which is thus habitually brought about. We are far from ignoring the comparative safety which may be obtained by the use of properly pasteurised milk suitably prepared and delivered, or of dried

milk, or of sterilising processes such as the electric treatment to which Professor J. M. BEATTIE has recently drawn attention. The movement in favour of obtaining "certified" milk prepared with special precautions also deserves every encouragement, and the official regulation of "certified milk" might well be included in the new legislation. But none of these measures suffice to meet the main demand. The ordinary householder does not want to buy special varieties of milk, or care to be offered milk graded according to its degree of bacteriological purity. He expects that what is sold to him as milk should be a reasonably sound commodity which he can consume, without cause for serious apprehension, in the raw state in which he generally prefers it. Though this needs an effort, it is by no means an impracticable demand to meet. The proposals of the Government Bill for the purpose will depend for their success, partly on the nature of the regulations made, and still more on the administration of the authorities, both central and local, which have to carry out the new policy. The appointment of a considerable veterinary staff as whole-time officials acting with the local public health departments must obviously form part of the intended administration. These veterinary officers will be needed not only to detect bovine tuberculosis and pay compensation to the owner of the slaughtered animal, but to advise the dairy farmer how to remove the conditions which favour bovine infection, and to enforce regulations made with that object.

It is believed that Mr. SAMUEL, warned by the fate of previous Bills, has taken great care to ascertain the way in which different branches of the milk industry will be affected by the proposed legislation and has made substantial efforts to meet their suggestions and anticipate objections. On considering the Bill as a whole, those who have so long been pressing for reform from the side of public health may perhaps consider that concession has gone too far in this direction. But much may be sacrificed for the prospect of an administrative scheme which on its inception would receive the cordial support and assistance of the majority and the best of those engaged in the industry, and which, in the case of all but those whose record shows them undeserving of consideration, would bring about progress by coöperation rather than by coercion.

DINNER TO MR. WILLIAM LANG.—On Thursday, June 25th, Sir Henry Morris, Bart., will preside at a dinner given to Mr. William Lang on his retirement after 33 years of active duty on the honorary staff of the Middlesex Hospital. The dinner will be held at Pagani's Restaurant, Great Portland-street, W., and Mr. Lang will be entertained by his former house surgeons, clinical assistants, and colleagues on the honorary staff, to whom a circular has been sent. At the same time any old Middlesex student who would like to be present and to do honour to Mr. Lang on this occasion will be heartily welcome, and is requested to communicate with Mr. Arnold Lawson, 12, Harley-street, London, W., who will be pleased to answer any inquiries.

Annotations.

"Ne quid nimis."

RECENT PLAGUE IN CUBA.

SCARCELY two years ago a small localised outbreak of plague occurred at Havana, the capital and chief seaport of the island of Cuba, and although at the time an excessive mortality among rats was observed none of the animals that were bacteriologically examined yielded satisfactory evidence that they had died from plague. As a result of the very vigorous enforcement of anti-plague measures under the direction of Dr. Juan Guiteras, chief of the Cuban Health Department, the disease seemed to subside as suddenly as it had appeared. It was, however, never made quite clear from what source the plague infection had been derived. Simultaneously with the Cuban outbreak in 1912, a larger and more virulent epidemic occurred in the island of Porto Rico, which, like Cuba, is under the protection of the United States; here there was an undoubted epizootic of plague among rats. In this instance also the origin of the first cases was never cleared up. Nothing was heard of plague in rats or man at Havana from midsummer, 1912, until the beginning of March of the present year, when up to the end of April 12 cases came under observation, along with a few other suspected instances. Though this number is small, there are some circumstances which suggest the possibility that the situation might become more serious than is at first sight apparent. Unofficial statements have recently been published in the press to the effect that the disease is spreading in Havana, but no details are brought forward in support of the allegation. The disease has now appeared at Artemesia, a town 35 miles from Havana. So far as we can learn none of the reports have indicated the precise origin of this second outbreak, nor has any mention been made whether the local rats are or are not involved. Dr. Guiteras, however, is reported as having said that plague was brought to Cuba, not by rats, but by fleas conveyed in sacks of sugar, but it is quite possible that early this year a fresh importation of the plague infection from some affected port took place. In this connexion it may be pointed out that this year, up to the time of writing, there has been no reported occurrence of plague in any other of the West Indian islands. Last summer there were rumours in circulation that cases had been recognised in Haiti, but this was officially denied, with what truth it is not possible to say, as affairs in this negro republic are conducted in a different way from that of other governments. At the present moment plague is prevalent in some parts of Brazil, in the port of Bahia for example, and cases have recently occurred in Venezuela, at Caracas. At the end of 1913 the disease was present in some River Plate ports, as well as in some of the inland districts of the Argentine. Although the ports on the west coast of South America are situated at a considerable distance by sea from the West Indies, it would not be impossible for rats from one or other of the ports now suffering from epidemic plague in Chili, Peru, or Ecuador to be conveyed on shipboard and landed at Havana or any other West Indian port, either concealed in crates and packages or in some other way, unless very special precautions had

previously been taken. If, however, the recent plague cases in Cuba were not due to a fresh importation of the disease but to a recrudescence in virulence of the 1912 infection, which has perhaps been maintaining itself in a mild form out of sight among the local rats, the situation would have to be regarded in a more serious light. It would obviously be difficult to get rid at once of an already established infection of which the precise extent and distribution are not known, and which would require much time and trouble to eradicate. Meanwhile there would be a danger of the disease being exported to some other ports in the Gulf of Mexico or along the Atlantic seaboard, from which the infection might perhaps spread up the great rivers into the populous districts in the interior of the United States. There was a time when such a prospect would have created consternation in the public mind; but nowadays confidence in the responsible authorities has gradually increased, and they are left to deal suitably with the emergency. So long as there is no concealment of the facts, and so long as the public officials concerned in the matter are kept informed of all the foci of the infection, plague can be effectually controlled by the application of those measures which are the outcome of the recent advances in our knowledge of the malady and its modes of spreading. As to Havana, Dr. Guiteras and his staff may be relied upon to take every needful step for suppressing the present outbreak and for preventing its extension to other places. There is, however, the possibility that before the existence of plague in Cuba was recognised this year some exportation of the infection may have taken place. This will probably entail upon those ports trading with Cuba a certain amount of increased care and vigilance with a view to searching out and dealing with the first evidences of plague discovered in rats or man, so that the disease may be promptly controlled and the infection destroyed.

THE SUPPLY OF COD-LIVER OIL.

WERE the question to be raised which is the most important fish from the medical point of view, the cod, no doubt, would take the first place. The unwavering popularity of cod-liver oil in diseases of nutrition is all the more remarkable in this age of substitutes, which, in spite of vigorous pushing, have failed to oust the remedy of our childhood. A more insidious danger to the good name of cod-liver oil has been the sale of oil taken from the liver of the shark and other fish as cod-liver oil. To what extent this practice has been followed in the past it is, of course, impossible to say, but it may safely be assumed that the cod-liver oil as sold to-day by the leading wholesale chemists is exactly what it calls itself. The demand for the genuine article being great, the consumer is naturally interested in the source of his supplies, particularly with reference to the adjustment of supply to demand. Much of the cod-liver oil on the market comes from the Lofoten fisheries on the west coast of Norway, where at certain seasons of the year the cod is caught in millions. The fish are said to be so crowded together that the weighted line may fail to reach the bottom, being intercepted by the intervening wall of fish. This statement, which savours suspiciously of fishing tales in general, suggests a boundless supply, and so it may be. But the Norwegian Government has not rested satisfied with such a vague estimate of one of its most important sources of wealth, and it has instituted a systematic research into the life-history of the cod. The Director of Fisheries, Dr. Johan Hjort, has lately given an account of these researches which have thrown considerable light on the migrations of the cod and on its rate of growth. In 1913, 2400 cod were caught, marked, and put back. Of these, 279 were caught again in the same season, a result which shows that the drain on the supply must be heavy. A cod which was marked on March 17th, 1913, at Henningsvaer was caught again on Feb. 12th, 1914, at Sörvaag. This shows that the cod returns to the Lofoten banks year by year, and, incidentally, that the method of marking adopted stands the test of time. The rate of growth of the cod is shown by the increase in length from 8·7 to 19·5 cm. observed in the case of a cod caught on May 26th, 1913, and again on Feb. 19th, 1914. It was also found that cod had travelled as many as 1700 kilometres during the few months which had elapsed between the marking and the second catch. Though the proportion of cod caught a second time is surprisingly great, its rapid growth and its wide range of excursion are reassuring features to the fisherman and the physician.

PARTIAL CONTINUED EPILEPSY.

THE above name has been given by Kojewnikow to a curious condition in which there may occur clonic spasms of certain groups of muscles similar in many ways to those of Jacksonian epilepsy, but which differ from them in that the spasmodic movements are maintained over long periods of time. In this latter feature it resembles myoclonus. Kojewnikow and Bruns in 1894 were the first to direct attention to the condition. Probably similar cases have been previously observed, but there is little doubt that they have been erroneously classed as myoclonus. The distinction, however, is afforded by the epileptic character of the onset of the spasmodic movements. A case of partial continued epilepsy has been carefully recorded recently[1] in a man, aged 34, the sufferer from paraplegia secondary to Pott's disease. Apart from this lesion, however, he began to suffer from clonic spasms of the right arm; later they involved the hand, and then the leg of the same side. Some days after there developed a flaccid paralysis of the right arm; no contractures followed. Then there occurred an epileptic crisis limited to the right arm, but which, instead of lapsing, has persisted in the form of clonic movements ever since, with occasional lapses. The Jacksonian crises in this case differ from the classic radiating form in several ways. The muscle groups concerned are variable at different times; now it is hand and face, without the arm; at other times it may be hand and right hypochondrium. The length of the crises is variable. Bromides can lessen the spasms for several hours. The form of the spasms may undergo abrupt changes: they may be rapid and of small amplitude and within a moment of time give place to slower and larger oscillations; sometimes a short pause intervenes. The interpretation of such a case is difficult. It is hard to understand why the lesion, which in this case is stated to be of tuberculous character and situated at the junction of the middle and inferior portions of the ascending frontal convolution, near the hand centre, should cause permanent clonus

[1] Long-Landry et Quercy, Revue de Neurologie, 1913, vol. xv., p. 145.

and not intermittent epileptiform crises. Clinically, it may be of importance to recognise these cases, as surgical intervention could be considered—a proceeding which would hardly be suggested for myoclonus.

THE USES OF EMETINE.

PERHAPS the most important therapeutic advance of recent years is the treatment of amœbic dysentery and hepatitis by hypodermic injection of emetine. We are indebted for it to Professor Leonard Rogers, of Calcutta.[1] He found that amœbæ were rendered inactive and apparently killed by a solution of emetine as weak as 1 in 100,000. The experience of many observers all over the world have shown the great value of this treatment which produces a veritable *sterilisatio magna*, although curiously the phrase has not been used here, but has been applied prematurely to a still more widely known new remedy. Some recent observations, principally French, show that emetine is useful in other diseases than dysentery. In a communication to the Académie de Médecine of Paris on April 14th M. L. E. Bertrand referred to the fact that Dr. Allen Hutchison, a medical missionary in China, had used emetine with most satisfactory results on patients infected with schistosomum japonicum and passing glairy and sanguineous stools. M. Tribondeau has treated three cases of dysentery in which the stools contained spirilla (without amœbæ). In two or three days the stools became normal and the spirilla disappeared. He also found the treatment beneficial in mucous colitis. Hæmoptysis and gastro-intestinal hæmorrhages are now treated in the French hospitals by emetine. Several communications on the uses of emetine have been made at the Société Médicale des Hôpitaux of Paris. At a meeting on Jan. 23rd, M. Louis Rénon referred to excellent results which had been obtained in hæmoptysis. He mentioned two cases of cancer of the lung under his own care in which the hæmoptysis disappeared under injections of emetine. He also referred to cases of intestinal hæmorrhage due to cancer of the lower part of the large intestine and to membranous colitis in which good results were obtained from subcutaneous injections of 4 centigrammes of emetine. M. Rénon himself had obtained rapid results in five cases of severe gastro-intestinal hæmorrhage—hæmatemesis and melæna. In two cases the hæmorrhage was due to hepatic cirrhosis. In one a woman had the gall-bladder removed for cholecystitis in November, 1912, too late to prevent gradual infection of the biliary passages and hypertrophic cirrhosis of the liver. While undergoing treatment at Carlsbad severe intestinal hæmorrhage occurred and did not yield to ordinary treatment. Duodenal ulcer was suspected and laparotomy was proposed. M. Rénon was summoned and thought that ruptured intestinal varices were a more probable cause than ulcer of the duodenum. He advised that operation should be postponed and emetine administered. The drug was not given and the patient's condition became desperate. When M. Rénon saw her again four days later she was pale as death and the pulse was uncountable. Under calcium chloride and the application of cold to the abdomen the hæmorrhage had diminished, but on the following day it became more abundant. He injected 6 centigrammes of emetine and 10 cubic centimetres of hæmostyl. The effect was most remarkable; the hæmorrhage permanently ceased and recovery ensued. In the three other cases of intestinal hæmorrhage, due respectively to tuberculous ulceration, uræmic ulceration, and ulcerative enterocolitis, emetine was used alone with equally good result. M. Rénon has obtained striking results from injections of 2 centigrammes of emetine once, twice, or thrice daily in desperate cases of bronchopneumonia in the aged. At the following meeting of the society M. O. Josué and M. F. Belloir reported excellent results from the treatment in intestinal hæmorrhage in typhoid and paratyphoid fever and alcoholic hepatitis. At the meeting of the society on March 13th M. Félix Ramond and M. Jacques Durand reported good results in acute and chronic bronchitis in consequence of the more fluid character of the expectoration after injection of emetine in daily doses of 4 to 8 centigrammes.

[1] THE LANCET, Oct. 19th, 1912, p. 1062.

A STUDY OF TUBERCULOSIS CONTACTS.

THE May number of *Public Health* contains reports on syphilis and public health, by Dr. F. W. Mott, and studies in the epidemiology of pulmonary tuberculosis, by Dr. A. S. M. Macgregor, both of which are well worth attention from those concerned in practical hygiene. An editorial note draws attention to the contrast between syphilis and tuberculosis in the nature of the administrative measures needed to reduce the prevalence of the diseases; it is pointed out that in syphilis we are concerned mainly with the seed, whereas in the case of tuberculous disease we are increasingly learning how large a factor the soil is in determining the incidence of attack. With the knowledge gained in the last few years there is prospect of doing much by well-designed administration to reduce the mischief caused by syphilis; in the case of tuberculosis, where an elaborate machinery for dealing with individual cases has already come into being, the conditions to be combated are much more complex and the underlying principles of action are less easy of definition. These observations have special relation to the studies made by Dr. Macgregor on the incidence of phthisis on the population of Glasgow judged by notifications, deaths, and the social condition of the cases as evidenced by the number of rooms in the tenements which they occupy. Dr. Macgregor has given the results of following cases notified in 1910 into the present year. Among other interesting figures are those which suggest that in the case of Glasgow children of school age stated to suffer from pulmonary tuberculosis a fatal result, if it occurs, nearly always happens within two years, and that the survival of a phthisical child for two or three years after recognition of its disease establishes a strong probability of its eventual arrest. The facts as to contacts in the houses affected are also noteworthy. The incidence of tuberculosis was distinctly more marked among the contact population than in the general population, particularly in the one-roomed tenements, but there was less gradation than might have been expected in the incidence on the contact populations living in two, three, and four rooms respectively, and the figures once more raise the disputed question as to the real meaning of the occurrence of tuberculosis in the contact. It would be natural to assume, as is now customary in daily practical work elsewhere among such cases, that the excess of tuberculosis among the contacts resulted from their exposure to the known infection, but it still appears possible to explain a

large part of the excess on the assumption that Dr. Macgregor was dealing with susceptible families, and that the contacts might not have fared better if the primary case in each family had not existed. The excessive incidence of tuberculosis on the occupants of the one-roomed tenements, again, may be due mainly to contact infection or may be explained by the hypothesis that there are more susceptible people among the poor than among those better off, and that under stress of poverty resulting from long illness in the family there is a special tendency for the tuberculous family to resort to the one-roomed tenement. These questions are of much importance, and it would seem that the only means by which they can be satisfactorily solved is by exact local inquiries into all the circumstances of notified tuberculosis cases, these being taken in sufficient numbers and over a long period of years. It may be hoped that investigations on the lines of those of Dr. Macgregor in Glasgow will be undertaken before long for other areas, and that local authorities, in their desire for "results," will not grudge the time needed for the continuance of such work. The importance of obtaining exact accounts, not only of possible exposure to infection, but also of conditions of environment and the racial and family characteristics of the cases in respect of tuberculosis, should be kept in mind by tuberculosis medical officers and others who are now securing records of the circumstances of tuberculosis cases and their home contacts at different periods.

MEDICAL SOCIETY OF LONDON.

THE concluding meeting of the session was held in the rooms of the society on Monday, May 18th, Sir David Ferrier, the President, in the chair. The annual oration was delivered by Mr. Robert Jones on the Surgical Aspect of Poliomyelitis, and will be published in full in our next issue. A vote of thanks to the orator was proposed by Mr. C. A. Ballance, seconded by Mr. A. H. Tubby, and carried by acclamation. The Fothergillian medal was presented to Professor J. G. Adami, F.R.S., of Montreal, by the President, who briefly related the history of the medal and paid a warm tribute to the services which Professor Adami had rendered to medicine in the domain of pathology. Professor Adami, in reply, thanked the President and Fellows for the great honour they had done him, and through him the profession of the Dominion to which he belonged. Afterwards the customary annual conversazione was held. A very large number of Fellows and guests attended.

SPINAL SCIATICA.

AN important discovery was made in the pathology of sciatica when it was found by Dejerine and his co-workers that the modifications of sensibility in this condition occurred in most cases in regions corresponding to the segments of the spinal cord and not to the peripheral nerves. This neurologist believes that in such cases we are dealing with a process of intradural distribution, which gives rise to a patchy meningitis, and which is associated with a more or less marked lymphocytosis in the cerebro-spinal fluid. The absence of definite motor symptoms, he explains, is probably due to the posterior situation of the local meningitis. Syphilis is believed to be the commonest cause. In the *Revue Neurologique* (1913, Vol. XVII., p. 253) J. M. Raimiste reports four cases of this spinal sciatica. All the cases presented the so-called classical symptoms of sciatica, but in addition there was exaggeration of the reflexes on the two sides. The sensory signs were variable, but there was some disturbance in all. In Case 1 there were hyperæsthesia, hypalgesia, and depression of temperature sense over definite regions in the limb; in Case 2, hyperæsthesia and hyperalgesia to pain and temperature; in Case 3, hyperæsthesia, hypalgesia, and lessened temperature sense; and in Case 4, depression of all forms of sensibility. On the motor side there was usually a slight degree of weakening. Of special interest in these cases was the result of lumbar puncture. In all there was within a few hours marked relief from the pain, and further, in three cases the recovery appeared to be lasting and complete.

RELAPSES IN ACUTE ARTICULAR RHEUMATISM.

ONE of the most characteristic and troublesome features of acute articular rheumatism is its tendency to relapse, uncontrolled by salicylate. One attack predisposes to another, with results that are most serious for the patient. It is generally agreed at the present time that acute rheumatism is an infectious disease caused by a living organism, and that it should be classed among the acute specific fevers. Relapse in these means re-infection, and in the case of acute rheumatism it is very commonly believed that the infecting agent "lies perdu" in the tonsils or naso-pharynx between the relapses, gaining access to the blood and giving rise to new arthritic manifestations as often as a relapse occurs. Good reasons have been given for believing that the throat is a common channel for infection here, but it is hardly likely that it is the only one. Professor J. M. Beattie has brought forward[1] experimental evidence to show that in rabbits, at any rate—animals in which the virus of acute rheumatism readily produces an arthritis with a tendency to relapse—the infecting organism can be recovered and cultivated from the synovial membranes of the larger joints in the intervals between the relapses. Even when no relapse occurred the organism—a streptococcus—could be recovered from the joints in many instances, in one as much as 12 months after the original infection had taken place. It is clear, therefore, that the virus of acute rheumatism may lie latent in the articular synovial membranes of the rabbit for long periods of time. Is the case the same with human beings? The question is answered in the affirmative by Professor Beattie and Dr. A. G. Yates. These authors endeavoured to obtain bacterial cultures from the synovial membranes of the knee-joints in 89 cases from the post-mortem room. Sixty were sterile, 12 contained putrefactive organisms or staphylococci, and 17 contained streptococci or diplococci. In 10 of the 17 cases the organism isolated was of the streptococcal type found in acute rheumatism, and 9 of the 10 were from cases with a definite rheumatic history or post-mortem evidence of rheumatism. Nine of these 10 organisms were inoculated into rabbits, and 6 of them produced the characteristic recoverable arthritis, while only one clearly failed to do so. It is pointed out that of the 79 cases that did not yield the streptococcus, only 4 could be regarded as

[1] Liverpool Medico-Chirurgical Journal, 1913, p. 487.

possibly rheumatic. Professor Beattie concludes that the relapses of rheumatism are due to the persistence of the causal organism in the tissues of the joints. He suggests that treatment should be carried on in the apyrexial periods between the relapses in order to destroy the virus. Salicylates have often proved ineffective here, and the search for some more potent drug should be made. In addition, he suggests treatment with vaccines during the latent periods of the rheumatic infection. He is very sceptical of the value of vaccines in acute processes, but believes that for microbic conditions which are not particularly active their value is beyond question.

COMPLEMENT FIXATION IN TUBERCULOSIS.

FEW better examples can be found of abstruse and seemingly trivial scientific observations which have ultimately proved to be of the greatest practical importance than the fixation or deviation of complement in the presence of an immune serum and the appropriate antigen. At the present time not only has the Wassermann reaction for syphilis become a matter of daily investigation, but in other diseases the same principle is being applied as a diagnostic procedure with conspicuous success. Such is the case in the diagnosis of glanders in horses, and in the sphere of human tuberculosis there are indications that a valuable test may be ultimately afforded when the phenomena have been adequately elucidated. Further investigations, in continuation of those already published in our own columns, have been made by Mr. Leonard Dudgeon, Dr. W. O. Meek, and Dr. H. B. Weir[1] which are of importance in this connexion. Some difficulty has hitherto existed in preparing a satisfactory antigen for this test, experiments having been made with various tuberculins and bacterial cultures. Dudgeon finds that an alcoholic extract of the bacilli is the most useful and trustworthy preparation. It is a matter for regret, however, that no details of the actual manufacture of the antigen are given. In human patients with tuberculosis of the lungs a positive reaction was obtained in 89·3 per cent., and this figure might have been increased if further examinations had been made in certain cases in which only one test was carried out. The serum often gave a positive reaction in dilutions of 1 : 100 or even 1 : 1000. The strength of the reaction and even its presence and absence may vary in the same patient from time to time in a curious manner which is not at present explicable. Thus no relationship could be traced between the condition or stage of the disease and the amount of immune body present in the serum, but on the whole the severe cases showed the presence of more immune body. The intercurrence of a febrile exacerbation similarly had no constant effect, the reaction appearing or disappearing, or becoming stronger or weaker, without any obvious reason. No prognostic significance could thus be attributed to the phenomenon, variations in both directions occurring irregularly in patients who were improving and in those going downhill. The actual diagnostic value of the test is not yet established, but it bids fair to form at least a useful supplement to the search for bacilli in the sputum in pulmonary cases. In surgical tuberculosis the percentage of positive reactions does not appear to be so high, and here a negative result would seem to be of little importance. In any case a single failure to react must not be taken to exclude tuberculosis, while frequent negative findings may at times occur in infected persons. A positive result appears to point with fair certainty to tuberculous infection, but no definite inference can be drawn as to its activity or quiescence. This week we publish the results of a further research on the Complement Fixation Test for Tuberculous Disease, by Dr. A. C. Inman, the superintendent of the Brompton Hospital Laboratories. He gives details of the manufacture of the antigen, and also supplies references to Professor Besredka's publications. The technique of the test is then fully explained. Dr. Inman gives an interesting account of his investigations and the conclusions at which he has arrived. The methods of previous observers left much to be desired, and the test proved so fallacious that little value could be attached to it. With improvement in technique, however, the reliability of the test has made a marked advance.

[1] THE LANCET, Jan. 4th, 1913; Journal of Hygiene, April 27th, 1914.

X RAYS IN THE DIAGNOSIS OF GALL-STONES.

UP to the past year the demonstration of gall-stones by the X rays has been regarded as so unusual as to constitute a curiosity. American workers have now so improved the technique that this method of examination has become important. In the *Boston Medical and Surgical Journal* of April 30th Dr. A. W. George and Dr. I. Gerber have described the present position of the problem. They began to find the shadows of gall-stones by accident during the course of bismuth examinations of the alimentary tract. Gradually the accidental findings became so frequent that they found it advisable to look for gall-stones in every case. They have now adopted the routine of examining the gall-bladder in every patient before giving the bismuth meal. Pure cholesterin stones do not interrupt the X rays to any appreciable degree, so that shadows of them cannot be distinguished. Fortunately such stones are not common, or at least do not cause many chronic disturbances. When the gall-bladder is chronically inflamed by repeated infection the stones deposited have the characteristic lamellæ of calcium and bile salts encrusted on the cholesterin core. It is only the calcium ingredient that is shown by the X rays, and the clearness of the demonstration on the plate depends on the amount of calcium present. As a rule in nearly every case of symptoms referable to gall-stones there is some calcium. Dr. George and Dr. Gerber think that it will soon be possible to state whether gall-stones containing calcium are present or not. Their technique for demonstrating gall-stones is very simple. The patient lies upon the table with his face down. The plate is placed under the right hypochondriac region. The maximum of definition is obtained with a very small diaphragm, 1½ inches in diameter, and a very small cylinder placed close to the back. It is preferable to use a fairly soft tube with a rapid exposure. It is better not to use intensifying screens, but the simple plates as in kidney work. The gall-stone shadows will vary according to their calcium content. Often there will be a central light area with a peripheral calcium shadow. Occasionally irregular deposits of calcium corresponding to the lamellated structure may be made out. As a rule the faceted outlines are clear, but a shadow suggesting a single mass may be due to closely packed gall-stones.

Evidences of gall-bladder disease are usually shown at the subsequent bismuth examination in the form of signs of pericholecystitis. The commonest sources of error in the diagnosis of gall-stones are renal calculi, calcified mesenteric glands, and costo-chondral ossification. Gall-stones may be distinguished from renal calculi by taking plates with the patient lying first on his abdomen and then on his back. Gall-stones are nearer to the anterior abdominal wall; therefore the anterior plate will show the shadows small and sharp, whereas the posterior will show them large and blurred. The reverse holds in renal calculi. Calcified mesenteric glands will be found to occupy different positions in different plates on manipulating the abdomen between the exposures. A calcified costal cartilage will be continuous with a rib.

A GENERAL HOSPITAL AND A MUNICIPAL TUBERCULOSIS SCHEME.

THE rapidly growing perception on the part of Government departments and local authorities of the importance of tuberculosis problems is leading to displays of commendable energy, even if some of the measures set on foot have not been thought out as carefully and organised as intelligently as they might have been. Still, experience teaches, and those in charge of all varieties of local anti-tuberculous efforts may learn a great deal from the first report, just issued, of the municipal dispensaries scheme inaugurated last year by the borough of Lambeth in conjunction with St. Thomas's Hospital. It is not every borough in London which has a big general hospital within its borders; but a good many of them have, and their medical officers of health may well take note of the advantages which accrue from the coördination of the voluntary hospital expert and his hospital facilities with the tuberculosis medical officer. Hitherto the voluntary hospitals have, to all intents exclusively, treated disease as it affects the individual and not as it affects the community. In the control of tuberculosis there is especial need of concerted action between the curative and the preventive agencies; and in Lambeth this ideal is being ensued by the dispensaries scheme there adopted, which was the first endeavour to utilise a general hospital in conjunction with municipal organisation. As far as London is concerned, this scheme was the first to obtain approval from the Local Government Board and the Insurance Commissioners, and it has formed the basis upon which several such schemes have been developed in other districts. There are two municipal dispensaries in Lambeth, one of which is housed in a special part of the out-patient department at St. Thomas's Hospital. They are worked on the same lines, and each is managed by a tuberculosis medical officer, working under the medical officer of health. The patients are interchangeable between the two, and the resources of each are open to the patients of the other. This is of special value to the Effra-road dispensary, for in difficult cases the medical officer can obtain at St. Thomas's Hospital the benefit of all their modern appliances and special departments—pathological, chemical, laryngological, radiological. Moreover, the tuberculosis officer in charge of the St. Thomas's dispensary can requisition the services of members of the visiting medical staff of that institution, and has also at his disposal a special ward of ten beds for purposes of observation and treatment. The working of this valuable scheme, as disclosed in the report now issued, thoroughly justifies the forethought expended upon it, and the report is a most useful contribution to the literature of the concerted attack on tuberculosis which the national conscience is beginning to demand.

DIAPHRAGMATIC PLEURISY SIMULATING GASTRIC ULCER.

TWO interesting papers have been recently published[1] drawing attention to the intimate resemblance in the symptoms due to inflammatory conditions of the diaphragmatic pleura and those of gastric or some abdominal conditions. The pain distribution in diaphragmatic pleurisy was shown by De Mussy in 1879 to be referred to two points—one over the phrenic nerve in the neck and the other in the hypochondrium. In 1911 Capps reported his ingenious observations upon what occurred when the diaphragm was irritated by means of a blunt wire introduced into the needle before fluid from the pleura was removed. He found that pain was elicited. If pressure was made upon the outer edge of the diaphragm there was pain in the abdomen; if made upon the central portion pain was referred along the ridge of the trapezius. There was often associated hyperalgesia of the skin. Dr. Dexter reports two cases, in both of which the urgent symptoms were abdominal. In one case there was pain in the left side of the abdomen; in the other it was in the right. In one case there was vomiting. In both, in addition to the abdominal pain, there was tenderness over the trapezius corresponding to the side in which the abdominal pain was felt. Hiccough was also present. In both cases there were found physical signs, slight in character, at the basal region of the lung. Still more striking were the eight cases of Dr. Mace. In all these cases the symptom-complex is stated to be due to adhesions between the diaphragm and basal pleura, and is caused not by acute inflammation, but rather by mechanical adhesions of tuberculous origin. The pain may thus arise whilst the patient feels quite well. There may be no lung symptoms, and the symptoms in the distribution of the pain simulate gastric ulcer. Thus, the pain may be worse after food; it goes through to the back and a tender spot can be found to the right of the lower dorsal vertebræ. "Wind" may be a very troublesome symptom. Hæmorrhage may even occur. Radiograms accompany the records of these cases, and in all there is definite evidence of diaphragmatic adhesions; there is also evidence of tuberculous infection of the lungs. In two cases operations had been performed for the relief of stomach symptoms, but without effect. In most of the cases the patients had undergone rigid dietetic treatment and were much emaciated. Following the radiographic records in these cases, which revealed the cause, treatment was directed primarily to the lung condition; tuberculin was given and liberal diet instituted, with satisfactory results in many instances.

THE President of the Board of Trade has appointed a committee of seven, with Sir William Collins, M.D., as its chairman, to inquire into the working of the Railway Employment (Prevention of Accidents) Act, 1900.

[1] R. Dexter: Cleveland Medical Journal, 1914, vol. xiii., p. 102. L. S. Mace: Journal of the American Medical Association, 1914, vol. lxii., p. 674.

NITON AS A THERAPEUTIC AGENT.

BY SIR WILLIAM RAMSAY, K.C.B., F.R.S.

THE application of niton ("radium emanation") as a therapeutic agent was tried in my laboratory at University College in 1904. A number of small bulbs, each containing a solution of radium bromide, were sealed to a Töpler pump; the water of the solution yields a mixture of oxygen and hydrogen gases, carrying with it the niton. That mixture was collected at convenient intervals, introduced into a small explosion burette, and by means of a spark the oxygen and hydrogen were made to unite. There is always an excess of hydrogen (due to the formation of hydrogen peroxide in the solution), and this hydrogen carries with it the niton. By introducing approximately half its volume of oxygen and again passing a spark the hydrogen is made nearly to disappear, and the niton remains in the explosion burette. The remaining trace of gas can be expelled into a small tube containing water, and the burette washed out with a trace of water. In this way a solution of the niton is obtained, and in the earlier experiments it was injected into the patient. The results have been summarised by Sir Lauder Brunton in the *British Medical Journal* of Jan 25th, 1913 (see also THE LANCET, Feb. 12th, 1910).

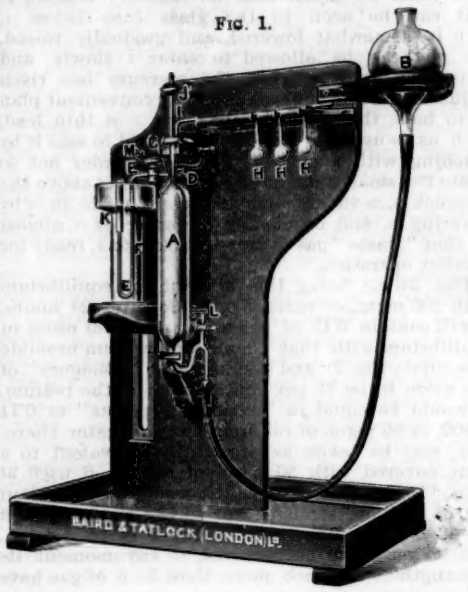
Since the use of radium has increased I have always recommended its application in the form of niton rather than as a salt of radium. The original method, as everyone knows, was to spread the radium salt on a plate or to enclose it in a thin glass tube; in the former case, it was protected by a layer of varnish; in the latter, the glass tube was enclosed in one of platinum or silver. Apart from the risk of loss of the precious radium, this plan has the disadvantage that the radium is not continuously in use; it is seldom applied during the night. But the production of niton from radium is continuous; it goes on night and day. And the radiating power of niton is 75 per cent. of that of the radium from which it is derived. It is true that the niton decays; but it can be used at any moment when its "strength" is known accurately; and a curve can be sent to the user, which will enable him to know exactly what he is doing when he applies the active material. For this purpose the niton must be introduced into appropriate forms of apparatus—tubes, bulbs, and hollow flat discs. These may conveniently be made of iron or of nickel; neither iron nor nickel is attacked by mercury, and nickel is preferable to iron, inasmuch as it is not liable to rust.

Description of Apparatus.

It has occurred to me that it might be useful were I to describe a simple form of apparatus by means of which niton can be enclosed in appropriate vessels. This apparatus does not include a pump; its manipulation is so simple that any workman can be entrusted with it after a few lessons. I have had a small form of such an apparatus in use for more than a year, and it functions admirably. I will describe it, however, as if it were to dispose of the niton generated by 500 mgm. of radium bromide; should less be in use, the size can be modified according to scale. It may be stated that the yield of mixed oxygen and hydrogen gases from 500 mgm. of radium bromide, amounts to approximately 25 c.c. in a week.

Fig. 1 gives a sketch of the apparatus. A is a reservoir of about 500 c.c. capacity; it is connected with a mercury reservoir, B, by flexible thick-walled rubber tubing. C is a trap, to make sure that no air enters A. At D platinum wires are sealed through the narrow neck of A. E is an inverted siphon, issuing in a mercury trough F. G is a two-way stopcock, connecting on the one hand with the radium bulbs H (it is advisable to have the tube of narrow bore); the bulbs may be more numerous, and may be kept in a locked cupboard or safe, through a hole in the side of which the connecting tube passes. I is a piece of thick-walled rubber

FIG. 1.



tubing; J is a hollow plate to be fitted, or it may be a silver or nickel tube, or, indeed, any form of hollow applicator which it is required to fill with niton; and K is a test-tube containing pure oxygen.

How the Apparatus is Employed.

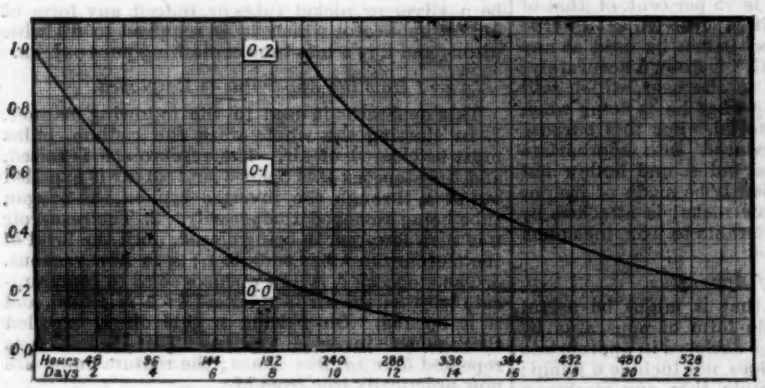
This apparatus is used in the following manner. 1. In starting the whole work the radium bulbs must be cleared of air. The reservoir B is raised, and the stopcock M is opened and all air is expelled out of A, through the inverted syphon, the oxygen tube being removed temporarily. 2. The reservoir B is then lowered, M being closed, until the level of the mercury in A has sunk to L; A is now vacuous. 3. The stopcock G is now opened, so as to communicate with H; the air in H enters A; G is closed, and M is opened. On raising B this air is expelled through the inverted syphon. This operation is repeated four or five times; the radium bulbs are now practically free from air.

It is necessary here to put a supposititious case. If 500 mgm. of radium are in connexion with the pump, and it is required to fill a hollow plate with the equivalent of 500 mgm. of radium, then, referring to the drawing, B is lowered, so as to evacuate A, and the tap G is turned, so as to bring A in communication with J. The air in J enters A. G is closed, M is opened, and this air is expelled through the inverted syphon. B is again lowered, M being closed, and the mixed

oxygen and hydrogen gases which have accumulated for 24 hours in the radium bulbs are drawn into A. As the total gas evolved from 500 mgm. of radium is about 25 c.c. in a week, there will be the seventh part in 24 hours, or 3·6 c.c. The space in the radium bulbs may be taken as negligible compared with the 500 c.c. capacity of A; if it amounts to 10 c.c. it will be a fiftieth part of the whole. B is then raised, and a spark is passed through the sealed-in wires at D; as a rule, about half a cubic centimetre of hydrogen will remain after explosion has taken place. By turning the stopcock G to communicate with J, that gas will enter J. Care must be taken that no mercury reaches I; that can be seen in the glass tube below I. If B is somewhat lowered, and gradually raised, the gas can be allowed to enter J slowly, and it is easy to stop when the mercury has risen to just below the rubber tube I. A convenient plan is to have the vertical tube from J of thin lead, such as is used for vaccine tubes, and to seal it by pinching with a pair of pliers. In order not to waste the small amount of gas remaining above the stopcock G, a vacuum may be again made in A by lowering B, and on closing the stopcock G almost all that "waste" gas is drawn back into A, ready for another operation.

The 3·6 c.c. being the amount in equilibrium with 500 mgm. of radium bromide after 24 hours, it will contain 0·15 of the total amount of niton in equilibrium with that quantity of radium bromide (see curve, Fig. 2); and assuming the "efficiency" of the niton to be 75 per cent. of that of the radium, it would be equal in "emanating power" to 0·11 × 500, or 55 mgm. of radium. The applicator, therefore, may be taken as practically equivalent to a plate covered with 50 mgm. of radium if used at once. If kept for 24 hours it would be equivalent to 0·85 of that "strength" or to 42·5 mgm.; if kept for 48 hours to 0·7 of that strength or to 35 mgm., and so on. The curve gives at any moment its "strength." If much more than 3 c.c. of gas have

FIG. 2.



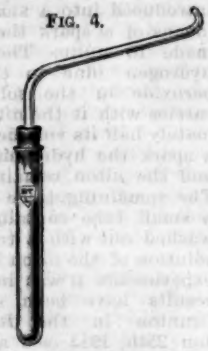
Curve showing decay of niton or gain of niton from radium.

to be exploded it is advisable to lower the pressure somewhat by depressing the reservoir B before passing the spark. To produce a spark a cheap little coil, costing only a few shillings, suffices; a couple of dry cells will operate it.

Tube-shaped Applicators.

The fitting of a tube-shaped applicator is carried out in the same way. If the tube is required to be a very fine one, however, the amount of gas may be too large. I find a good plan to be the following. It is possible by lowering the reservoir B and opening the stopcock M very carefully to draw mercury, drop by drop, into A. By depressing the test tube K over the inverted syphon an amount of oxygen, equivalent to one, two, or more drops of mercury can be drawn into the inverted syphon; supposing two drops of mercury have fallen, then their volume of oxygen will remain in the inverted syphon. The oxygen tube is then raised and mercury allowed to enter by opening the tap M

FIG. 3.

FIG. 4.

until the oxygen passes into A. With a little practice it is not difficult to introduce a small quantity of oxygen, half the volume of the hydrogen remaining after the first explosion. A second explosion is made, and the hydrogen nearly disappears; the niton is mixed with this very small residue. Instead of having a lead tube connected with the applicator, in this case a piece of glass quill-tubing, which has been drawn out to a wide capillary and closed at the end, as in Fig. 3, is slipped into the rubber tube at I. This tube before beginning the operation is emptied of air, as already described for the disc-shaped applicator. Then the niton is exploded and the residue again exploded with a trace of oxygen, as already described; and the infinitesimal residue is forced up into the capillary tube by raising the reservoir B, followed by mercury. By means of a fine mouth blowpipe flame the capillary tube can be fused at the constriction; and the niton now enclosed in the capillary can be introduced into a metal tube of the desired thickness.

Filling the Oxygen Tube.

To fill the tube K with oxygen is very simple A piece of tubing about 6 inches long and ¼ inch wide is closed at one end. Into it is placed some solid potassium permanganate so as to fill it to a depth of 2 inches. The upper part of the tube is then drawn off and bent as shown in Fig. 4. On warming the permanganate with

a Bunsen burner a steady stream of oxygen comes off, which is allowed at first to bubble through the mercury in the trough F. After a fair quantity of oxygen has passed it can be taken for granted that the air in the permanganate tube has been displaced by oxygen. The bent end is then passed under the open end of the inverted test-tube, which is filled with oxygen. Such a permanganate tube will serve many times, for it stops giving oxygen as soon as it cools.

Recovery of Residual Niton.

After a tube has been used for applications it still contains niton, and it is desirable not to waste it. The amount can be calculated accurately from the quantity of radium bromide from which it has come, and its age; or it can be read off from the curve. Hence it may be re-used, mixed with more from the source—the radium bromide. To effect this a small glass apparatus, shown in Fig. 5, may be employed; *a* is the piece of rubber tube shown at I (Fig. 1); *b* is a piece of steel with a sharp-cutting edge at *c*; *d* is the lead tube of J, closed by nipping. This lead tube is pushed down so as to pass the edge of the stopcock *b*.

FIG. 5.

This apparatus is emptied of air, as already described; the air is rejected through the inverted syphon as before. Then by manipulating *b* the lead tube is cut; the gas in J passes into the reservoir A, the mercury in which has been lowered by depressing B. In this way the residual niton in such applicators may be recovered. In the case of a glass capillary, as in Fig. 3, it may be introduced into the apparatus of Fig. 5, the upper end of which is closed with a glass plug. The thin-walled capillary is easily broken and its contents recovered, as described.

"Strength" of Niton Generated.

As a rough guide, it may be taken that every cubic centimetre of mixed oxygen and hydrogen gases corresponds to niton of equal "strength" to 10 mgm. of radium bromide. But it depends on its age. For example, if instead of drawing gas from 500 mgm. of radium bromide after 24 hours' standing it had been drawn after 12 hours, the amount obtained would, of course, have been the fourteenth part of 25, or 1·8 c.c. But this would contain the niton generated in 12 hours, and by referring to the curve it is seen to be 0·08 of the total—that is, it is the quantity in equilibrium with 500 × 0·08, or 40 mgm.; and to get at the "strength" in radium units, multiplying by 0·75, it is in actual "strength" at the time of drawing equal to 30 mgm. It is evident, therefore, that the oftener the niton is "drawn" the more advantageous; and this is an argument in favour of having a central "institute," where a large supply of radium is kept and from which frequent drawings of niton can be made, rather than to parcel it out in small quantities and have to be contented either with weak doses, or to have to wait long for a strong dose at considerable pecuniary sacrifice. The apparatus here described can be had from Messrs. Baird and Tatlock, 14, Cross-street, Hatton Garden, London, E.C.

MEDICINE AND THE LAW.

A Case of Unqualified Practice.

AT the Worcester county court on May 13th the Society of Apothecaries recovered a penalty of £20 against Charles Burden, herbalist, of Bridge-street, Worcester, for a breach of the Apothecaries Act, 1815, in that he had acted and practised as an apothecary or medical practitioner in attending and medically treating Mrs. Rosina Daniels, of Ombersley-road, Worcester, whose death in February last was the subject of an inquest conducted by the Worcester city coroner.[1] It appeared from the evidence that Mrs. Daniels had died from Bright's disease and that she had been visited and attended by the defendant and supplied by him with herbal medicines for some months previously to her death, the defendant having informed Miss Daniels, the daughter of deceased, that he believed she had an internal abscess and that the medicine he was giving her was bringing the poison out. The deputy judge in the course of his judgment said as to the definition of an apothecary he felt bound to accept that given by Mr. Justice Cresswell in the case of the Apothecaries Company *v.* Lotinga—viz., that an apothecary was a person who professed to judge internal disease by its symptoms and applied himself to cure it by medicine. The second question was, Did the defendant act and practise as an apothecary? On that the evidence was all one way. The evidence of Miss Daniels that the defendant treated her mother, felt her pulse, and supplied her with medicine was entirely borne out by defendant. Judgment with costs was accordingly given for the society, and a stay of execution granted for 21 days, money to be paid into court within 14 days.

Coroners' Inquests and the Insurance Act.

In opening an inquest recently in the City the coroner, Dr. F. J. Waldo, told the jury that he had received a circular letter from the Home Secretary inviting coroners to give notice to the Insurance Commissioners if they had reason to believe that at an inquest about to be held questions might be raised affecting the relations between an insured patient and a medical man on the panel, or otherwise connected with the Insurance Act. It was intimated that if opportunity was given the Insurance Commissioners might desire to be represented at the inquest. At the inquest in question the fact that the medical practitioner on whose list the deceased had been had not attended at once when summoned gave rise to discussion as to the scarcity of medical men in the City. The gentleman in question had not understood that the summons was an urgent one. He stated that he believed that he was the only member of the panel residing in the City, although others attended there in the day-time and lived elsewhere. Mr. Gilbert, representing the National Insurance Commissioners, pointed out that the question where a medical practitioner lived did not affect his obligations under his contract. He had to make arrangements whereby his patients could be attended at all times.

A Parent and Medical Treatment for his Child.

The St. Helens education authority recently summoned with success a brakesman, earning 35*s.* per week, for 1*s.* 6*d.* claimed from him

[1] THE LANCET, Feb. 21st, 1914, p. 561.

for medical treatment of his child at the school clinic. The summons was under Section 13 of the Administrative Provisions Act, 1907, and Section 1 of the Local Authorities Medical Treatment Act, 1909, the first enabling the treatment of the child to be provided for, and the second authorising the recovery of the cost from the parents. The charge was in respect of the filling of two teeth, the necessity for which the father denied. It was pointed out that at the barest cost price for what had been done the defendant might have been charged at least 4s. 6d. The defendant denied that he had been told there would be a charge made, but he had signed the consent book in which the conditions were set out. It was also pointed out that he might have had the child treated privately, and that if he had refused to do this after refusing to have her treated in the school clinic he would have been liable to proceedings under the Children Act for causing her unnecessary suffering. The magistrates ordered the defendant to pay the 1s. 6d. claimed, with 8s. 6d. towards the costs. He was also informed that he might have been called upon to pay the whole of the costs, amounting probably to at least £5.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

MEETING OF COMITIA.

A COMITIA was held on May 14th, Sir THOMAS BARLOW, Bart., K.C.V.O., the President, being in the chair.

The following Members who had been elected to the Fellowship at the last meeting were admitted as Fellows:—Dr. Cuthbert Henry Jones Lockyer, Dr. William Mitchell Stevens, Dr. Arthur Stanley Barnes, Dr. James George Taylor, Dr. Dudley William Carmalt-Jones, Dr. Samuel Alexander Kinnier Wilson, Dr. Hector Charles Cameron, Dr. John Foster Gaskell, Dr. Gordon Morgan Holmes, Dr. Frederick Gowland Hopkins, Sir Alfred Henry Keogh, and Sir William Boog Leishman, F.R.S.

Diplomas in Tropical Medicine and Hygiene were granted, in conjunction with the Royal College of Surgeons of England, to the following candidates:—Vivian St. John Croley, Gordon Gray Jolly (Captain, I.M.S.), Maharaj Krishna Kapur, and Andrew Murphy (Major, I.M.S.).

A sketch of the late Sir Samuel Wilks was presented to the College by Dr. F. G. D. Drewitt. The thanks of the College were returned to the donor.

The following communication was received: From an Interdepartmental Committee which is considering legislation consequent on the provisions of the International Opium Convention (1912), asking the opinion of the College concerning certain limitations to the sale of opium, morphine, heroine, cocaine, &c. The matter was referred to the Censors' Board.

Dr. NORMAN MOORE proposed, and Dr. FREDERICK TAYLOR seconded, that a committee should be formed to report upon recent alterations in anatomical nomenclature. The proposal was adopted, the nomination of the members of the committee being left to the President.

A report was received and adopted from the committee appointed to consider a letter from the Board of Control concerning grants to aid scientific research in the subject of mental disease. The report was as follows:—

> The committee is of opinion that these grants should be paid to a few thoroughly trained observers, and that these persons and the nature of their investigations should be selected and approved by a small competent advisory committee appointed by the Board of Control.
>
> The committee is strongly of opinion that no grant should be allocated to municipal bodies or county councils for the purpose of subsidising or of maintaining pathological laboratories, or of paying assistants to do routine work.
>
> The committee recommends that the grants should be devoted to the study of such fundamental problems concerning insanity and mental deficiency as require scientific investigation from the clinical, pathological, biological, and sociological aspects.

The PRESIDENT then dissolved the Comitia.

THE ROYAL SOCIETY CONVERSAZIONE.

THERE was a distinguished company present at the Royal Society conversazione, which was held at Burlington House on May 13th. Sir William Crookes, O.M., D.Sc., the President, received the visitors, who showed an evident interest in the variety of scientific exhibits chosen for the occasion. Physics and biology were more strongly represented, perhaps, than other departments of science, and there was a notable absence of electrical demonstrations which for so many recent years have provided a favourite topic.

There was little shown of direct medical interest, if we except the demonstrations for which Professor Leonard E. Hill, Professor A. F. Stanley Kent, and Mr. H. G. Plimmer were respectively responsible. Professor Leonard Hill, together with his assistant, Mr. O. W. Griffith, exhibited the caleometer, an instrument designed to measure the degree of comfort in a room or a public hall or factory in so far as that depends upon the rate of cooling of the human body. A "coil" made of a wire having a temperature coefficient forms one arm of a Wheatstone's bridge, the other arms of which are made of an alloy the electrical resistance of which does not vary with the temperature. The bridge is balanced when the temperature of the "coil" is approximately that of the human body, the current being supplied from accumulators or from the main circuit. Any tendency to a variation of this temperature is checked by an automatic rheostat worked by a relay, so as to diminish the current when the temperature rises and *vice versâ*. By means of an indicator the number of calories supplied per minute to the coil to keep its temperature constant is shown at any instant. Comfortable conditions are indicated by gentle oscillations of the pointer about a mean value of 30 calories per minute. A low steady reading denotes monotony and oppressiveness, while violent oscillations about a mean value are evidence of excessive cooling by an unpleasant draught. Professor Stanley Kent exhibited specimens showing the existence of muscular continuity between the right auricle and the right ventricle in the heart of man. The structures illustrated lie at the junction of the right auricle and right ventricle at the right lateral margin of the heart. The ventricular fibres concerned are derived from two systems: (*a*) fibres ascending vertically from the direction of the apex immediately under the endocardium; and (*b*) fibres running obliquely inwards from the middle layers of the ventricular wall. Both of these sets of fibres become connected with a rounded mass of auricular substance, which differs markedly in structure from auricular tissue, and resembles the tissue found in the sino-auricular and the auriculo-ventricular nodes. Mr. Plimmer showed an interesting collection of parasites which were either new or found in new hosts. Amongst these were toxoplasma in the blood of fossa, and also in the blood of the blue-tailed fruit pigeon; myxobolus from the gall-bladder of a giant toad; intestinal organisms in the blood of ambiona box-tortoise, showing parasitic adaptation; microscopic sarcosporidia in the muscles of a langur; mycosis from the lung of a Brazilian tortoise of aspergillar form; coccidia in intestinal epithelium of a dhole and babesia in the blood of another dhole (Nagpur).

Messrs. Chance Brothers and Co., of Oldbury, Birmingham, exhibited an interesting series of glasses designed for spectacles for the absorption of ultra-violet and infra-red rays and for the reduction of glare. The experimental results so far as they have gone were the subject of a recent paper read before the Royal Society by Sir William Crookes. Mr. W. A. Douglas Rudge showed an interesting experiment illustrating the phenomenon of electrification produced during the raising of a cloud of dust. It appears that considerable charges of electricity are produced. A charge of one sign is found upon the dust itself and another charge of opposite sign either upon the air or else upon fine particles of dust which remain suspended in the air. Generally dust of an acidic nature—e.g., silica—gives a negative charge to the air, while metallic oxides and organic bases give positive charges. It would be interesting to learn whether this phenomenon is by any chance connected with the initiation of dust explosions in coal mines, flour mills, and so forth. Professor E. W. MacBride and Mr. H. G. Newth showed specimens of double tadpoles

of the frog and also double sea urchins. According to these observers the duplicity in the frog larvæ is of varying degree and was produced experimentally. Fertilised eggs were inverted immediately upon the completion of the first cleavage furrow, and were kept inverted till gastrulation was complete. The apparatus and technique employed were included in the demonstration. The duplicity in the sea-urchin larvæ consists in the development of an urchin-rudiment on both sides or of pedicellariæ on both sides, whereas the normal larva has its rudiment on the left and its pedicellariæ on the right. The Meteorological Office authorities exhibited some aneroid and mercury barometers with centibar and millibar graduation. They also displayed a chart giving a hundred years of rainfall in the London district. The rainfall for each month from Jan. 1st, 1813, to Dec. 31st, 1912, is thus recorded. The Hon. R. C. Parsons exhibited an ingenious apparatus for automatically mixing in definite proportions one liquid with another. The application of this "chemical ejector" to the purification or softening of water-supplies is giving remarkably uniform results.

During the evening demonstrations were given in the meeting room by Professor J. P. Hill, who delighted his hearers with an account of the Percy Sladen Expedition to Brazil, 1913, and by M. P. Schilowsky, who brought the subject up to date in regard to the application of the gyroscope to locomotion on land, on sea, and in air. The extraordinary stabilising property of the gyroscope was illustrated in a most interesting way.

SUGGESTED REFORM OF MEDICAL EDUCATION IN CHINA.

Dr. Wu Lien Teh, better known to English readers as Dr. G. L. Tuck, has recently presented, in his official capacity as medical officer to the Chinese Foreign Office at Harbin, an interesting memorandum on the present status of medical education in China[1] in which he urges thorough reform.

After a brief reference to his observations at the International Medical Congress in London and the International Congress of School Hygiene at Buffalo, U.S.A., which he attended on behalf of the Chinese Government, Dr. Wu Lien Teh lays down the principle that to improve and further the best interests of medical science and education so that the graduates of the Chinese medical colleges may have the same standard of efficiency and ideals as those of the West, it is essential that the institutions where medical education is given and the hospitals where the sick are cared for and the students learn their clinical work should be in the hands of men who themselves have worked in, and are thoroughly acquainted with the management of, the best medical schools and hospitals of the West.

The Present Status of Medicine in China.

As to the present status, he points out that, in spite of some excellent methods of treatment and a long list of useful drugs handed down in China by the ancients, nothing has been done by their successors to improve knowledge or to keep abreast of the times; consequently the majority of native trained physicians to-day are completely ignorant of the true causes of most diseases, especially epidemic diseases, of their diagnosis, rational treatment, and prevention; while many diseases, such as malaria and internal abscesses, blindness from cataract, regarded by the ancients as incurable, are still so regarded, though to Western-trained practitioners they yield to very simple methods. Typhus fever, relapsing fever, leprosy—the scourges of China—have almost been wiped out in Western lands, and even syphilis, in which the same drug (mercury) is used in both East and West, Western results are better because Western methods are more accurate and scientific.

The author further points out that owing to lack of sufficient training at home, men possessing medical qualifications of Government institutions in China have to undergo the ordinary students' course of five years' instruction before they can obtain a degree at a foreign medical school, the training in China counting for nothing in a Western country; and even in the matter of Chinese Government appointments—health and customs officers, railway surgeons, &c.—medical men of other countries enjoy a higher social standing and greater privileges than native ones.

Existing Facilities for Medical Education in China.

The existing facilities for medical education in China are of three kinds:

1. Government medical colleges—viz., the Peiyang Medical College, Tientsin, founded 20 years ago by the Viceroy Li Hung Chang; and the Army Medical College, also at Tientsin, founded ten years ago by the present President, Yuan Shih Kai. The Canton Army Medical College, established some years ago, was recently closed, being unsatisfactory in consequence of insufficient staff and equipment.

2. Missionary colleges, at which diplomas are granted after four or five years' training. The medical teaching of these colleges, in accordance with a decision of the Triennial Missionary Medical Conference in 1913, is now to be centralised in eight large cities—viz., Mukden, Peking, Tsinanfu, Chengfu, Hankow, Nanking (or Hangchow), Foochow, and Canton.

3. Institutions controlled by foreign governments or corporate bodies where Chinese students can obtain a medical training—viz., the German Schools in Shanghai (1908) and Tsingtau (1911), the Harvard Medical School, Shanghai (1912), the Japanese Medical School, Mukden (1912), and the Hong-Kong University (British, 1911), of which last the medical faculty pre-existing the university is the oldest and most important.

Suggested Coöperation of the Government with the Mission Colleges.

Inasmuch as the cost of establishing an up-to-date medical college with adequate staff and equipments is, in the present state of Chinese finances, out of the question, the author suggests that the Government should avail itself of the opportunities held out by the mission colleges.

At the Missionary Medical Conference above referred to resolutions were passed affirming that, as the sole object of these colleges was to aid the Chinese people by providing a thorough training for natives in medicine and surgery, there was no desire to retain them as permanently foreign institutions, but it was rather purposed to hand them over ultimately to the Chinese themselves. Consequently, it was desired to bring their teaching into line with the regulations of the Ministry of Education and to coöperate with the Government.

As the Union Medical College at Peking is situated at the seat of government, has its organisation almost complete, and has for years been subsidised with monetary grants, while its graduates have been recognised by the Board of Education of the Ching Dynasty, the author therefore suggests that the Government and this college should endeavour to arrive at a mutually advantageous scheme of coöperation as an experiment. If successful the Government could then coöperate with the medical institutions in other large centres which had proved themselves efficient.

A Central Medical Council.

The author also suggests the establishment of a central governing body, the Central Medical Council, to which the Board of Education should delegate its power in regard to medical education. This council should consist of an official of the Board of Education, with one representative from each of the medical schools in China approved by the Board, and perhaps power to coöpt one or more leading medical men who have contributed to the promotion of medical science in the country. The duties of this council would be to determine what language or languages shall be used for medical teaching, to fix a minimum standard of preliminary education and a minimum medical curriculum, to supervise examinations and perhaps act as a central examining body for the whole country, to recognise schools other than those already recognised by the Board of Education, as well as hospitals for clinical teaching, to draw up and enforce laws relating to the practice of medicine, to issue a medical register, and to adopt a general nomenclature of medical terms in Chinese.

[1] Memorandum to the Board of Education (in Peking) on Medical Education in China. By Wu Lien Teh, M.A., M.D. Cantab. Reprint from the China Medical Journal, Shanghai, March, 1914.

Proposed Curriculum.

The scheme of education suited, in the author's opinion, to the needs of the country might be something as follows:—

A. Preliminary examination in general education, consisting of (1) classical Chinese; (2) a working knowledge of English, German, or French, with the outlines of history and geography of Europe and Asia, with special reference to China; and (3) mathemathics—arithmetic, geometry (Euclid I. to IV.), algebra, with easy quadratic equations. Such an education can be obtained at present at the higher Government and missionary colleges to be found in most of the large cities. These colleges might be enlisted in the propaganda for a medical career, and scholarships and prizes should be offered.

B. Medical education. This should consist of five years, each year having a three months' summer and a six months' winter session. In the first year there would be lectures and practical work in botany, zoology, chemistry, and physics, and lectures in elementary anatomy, with examinations at the end of each session. The second year would include practical anatomy with dissection of the whole body, and histology and anatomical demonstrations; lectures and practical work in physiology and practical chemical physiology, with an examination in anatomy and physiology at the end of the year. The third year would be occupied with morbid histology, pathology, and post-mortem work, bacteriology, materia medica, and therapeutics, out-patient surgical dressing, and clinical surgery, with an examination at the end of the year in pathology, bacteriology, and materia medica. The fourth year would include clinical surgery, medicine, and gynæcology, and attendance on midwifery cases during the summer holidays, with lectures on midwifery and gynæcology, medical jurisprudence, public health, and tropical medicine, and would close with an examination in midwifery, gynæcology, forensic medicine, and public health. The fifth (final) year would be devoted to infectious diseases, diseases of the eye, skin, ear, nose, and throat, and dispensary practice in the summer session; and in the winter to lectures and clinical work in medicine and surgery, vaccination, and dispensary practice. This would be followed by the final qualifying examination in medicine and surgery.

The importance of allowing dissections has to be emphasised by the author, because of the great objection thereto consequent on the ancestor worship of China. But, as he points out, the same objection was raised to the first railways in China, owing to their entailing the removal of graveyards, and opposition on this score has now been removed. Moreover, the Japanese, who hold similar religious beliefs to the Chinese, have allowed dissections and post-mortems since they adopted Western medicine, and their medical graduates are now equal to any in the world. Arrangements for post-graduate study and facilities for foreign study are also urged.

The Language of Medical Teaching.

On the question of the language to be used in teaching, inasmuch as foreign teachers will necessarily have to be employed for a long time yet to supplement the limited supply of Chinese Western graduates, and since a working knowledge of Chinese cannot be attained without years of preparation, the adoption of English is suggested on the grounds that "Western scientific workers are practically unanimous that during the coming years the greatest advances in medicine will be made in America," and also that English is more commonly used in China than any other foreign language.

The Hospitals and Medical Education.

In discussing the relation of the hospitals to medical education, some very sound observations are made. Simpler and less expensive buildings than those seen in America are considered sufficient. Hospitals associated with teaching schools form so integral a part of medical education that they must be considered as actual departments of such schools, being built to suit the needs of the various branches of medical science, and their senior physicians and surgeons being *ipso facto* heads of their respective departments in the University. The proper working of the hospital in regard to patients should be carried out entirely without the help of the student, whom it should serve simply as an institution for instruction. If the care of patients depends for efficiency in any degree on the student it will militate against its proper use as a means of instruction for him. The hospital must also assist the student to a conception of surgical cleanliness, carefulness and accuracy of observation, discipline, sympathy, and humaneness.

Western versus Oriental Medicine.

In concluding, the author points out the absurdity and expensiveness of maintaining two systems of medicine. "Either modern medical methods are superior to the old methods or the old methods are superior to the modern. If old methods are better they should be retained and the modern methods abolished. If, on the other hand, modern methods are better—and this has been proved in all up-to-date countries, including Japan, whose people used to have the same ideas as ours—they should be wholly adopted, and steps should be taken for a gradual merging of the old into the new one."

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

MEETING OF COUNCIL.

AN ordinary meeting of the Council was held on May 14th, Sir RICKMAN GODLEE, the President, being in the chair.

Surgeon-General Arthur William May, C.B., R.N., was introduced, and after signing the by-laws and making the required declaration, was admitted a Fellow of the College. Mr. J. Howell Evans was introduced, and the PRESIDENT handed to him a cheque for the amount of the Jacksonian prize, together with a document declaratory of the award.

It was resolved to issue diplomas of Membership to 104 successful candidates. It was resolved to grant diplomas of the Licence in Dental Surgery to 41 successful candidates. It was resolved to grant, in conjunction with the Royal College of Physicians of London, diplomas in Tropical Medicine and Hygiene to four successful candidates.

Mr. C. A. Ballance was re-elected a member of the Court of Examiners.

A letter was read from Mrs. Bruce Clarke thanking the Council for their resolution of condolence on the death of her husband.

The PRESIDENT reported that he had accepted a pencil sketch of Thomas Wormald, President of the College in 1865, presented by his sister, Mrs. Leighton, through Sir Berkeley Moynihan, together with a plate of drawings by Sir Charles Bell from a very early case in which vaccination was performed. The best thanks of the Council were accorded to Mrs. Leighton for her gift. A letter was read from Mr. Clement Lucas resigning his seat on the Council. The resignation was accepted, and the Council expressed their regret that the state of his health should cause him to sever his official connexion with the College, and the PRESIDENT stated that the vacancy so occasioned would be filled up at the annual meeting of Fellows in July.

It was resolved, in accordance with a report from the Board of Examiners in Dental Surgery, that the First Professional Examination be held three times a year, commencing in the third or fourth week of January, April, and September, and that the Second Professional Examination be held three times a year, in February, towards the end of May or early in June, and in November.

ROYAL COMMISSION ON VENEREAL DISEASES.

AT the thirty-fourth meeting of the Royal Commission on Venereal Diseases evidence was given by Dr. M. H. Frances Ivens, honorary medical officer for diseases of women at the Liverpool Stanley Hospital, honorary surgeon to the Samaritan Hospital, and honorary medical officer to the Liverpool Maternity and Rescue Homes. Dr. Ivens said that her experience in Liverpool led her to the conclusion that gonorrhœa in women was extremely widespread in that town. Investigations which she had made in the years 1907 to 1909 respecting the incidence of gonorrhœa in gynæcological hospital practice showed that of 1052 consecutive out-patients 149, or 14 per cent., suffered from gonorrhœa, and of these 47, or 30 per cent., were sterile; of 159

in-patients 39 had gonorrhœa, or 1 in 4, and of these 13, or 33 per cent., were sterile.

Dr. Ivens said that the disease was difficult to cure completely and that relapses were frequent. Reinfection was also very common, and was the cause of much disappointment after prolonged treatment. This raised the important question whether in the case of a married woman the patient should be informed of the true nature of the disease from which she was suffering. At the present time it was the custom in the medical profession to conceal the nature of the disease from the wife in order to avoid causing mental worry in addition to physical illness. Dr. Ivens said that the question was a difficult one, but she doubted whether the present attitude in this matter was correct. It was manifestly unfair that a woman should be subjected to repeated reinfection without her consent, and if unaware of the nature of the disease she was unlikely to submit to efficient treatment. If any change were to be made by the medical profession in this matter it must be made by the profession as a whole.

At the thirty-fifth meeting evidence was given by Professor F. W. Andrewes, pathologist at St. Bartholomew's Hospital, and Miss Gregory, honorary secretary of the Home for Mothers and Babies, Woolwich. Professor Andrewes's evidence dealt mainly with the subject of the results of syphilis in the production of arterial disease. There were, he said, several diseases of the blood-vessels and the heart commonly fatal in their result, and by no means rare, which were not obviously syphilitic in nature, and did not figure as results of syphilis in death returns, but which were now recognised as late results of syphilis. The main object of his evidence was to draw attention to the commonness and gravity of these indirect and late results of syphilis.

Miss Gregory said that she was anxious to impress upon the Commission the necessity for every pupil midwife receiving a short course of lectures on venereal diseases and clinical instruction at a lock hospital. At the present time she thought midwives were absolutely ignorant in these matters. It would be impossible to include such a course of lectures in the present syllabus, and she would not advocate it unless the whole training were lengthened; at present the period allotted by the Central Midwives Board for training was the wholly inadequate one of three months.

APRIL AT HOME AND ABROAD.

At Home.

FOLLOWING the example of February and March, April continued to bring rain in great or small quantities nearly every day until about the 12th, when it suddenly changed its character and gave one of the brightest and driest spells that this country has experienced for a very long period. For about three weeks there was no rain whatever over a large portion of England, and in Scotland and Ireland the falls were extremely slight and few. The temperature, too, which had not been low during the unsettled opening of the month, rose very appreciably, and many parts of the kingdom recorded shade maxima as high as 70°, while most of the nights were fairly mild, and frost severe enough to injure the profuse blossom covering the fruit trees was very restricted in its area. Over the country generally the mean temperature for the month was 3° or 4° above the average, and the sunshine between two and three hours per day in excess, while in numerous localities the aggregate rainfall was less than half the normal. At Kew the mean maximum temperature was as high as 59°, or 5° above that of a normal April, and the mean minimum, 41°, exceeded the normal by 1°. The total number of hours of sunshine was a trifle above 220, and represented an excess of more than two hours per day, while the rainfall, 0·81 in., was as much as 0·85 in. below the average. Some other parts of the metropolitan area were, relative to their average, brighter than Kew. At Westminster the total number of hours of sunshine was 216, giving an excess on the average of nearly 3½ hours per day, while at Greenwich the aggregate was as high as 232 hours. Both Bath and Nottingham were slightly warmer than Kew during the daytime and a little colder at night, and at Bath the days were brighter, yielding the large aggregate of 241 hours of sunshine, an excess of three hours daily. Nottingham was also very bright, with 224 sunny hours, and at Birmingham the figure was nearly 210 hours. Along the coast to the south and west the duration of sunshine was, as it is generally, more liberal than elsewhere. About 230 hours was a common total along the south coast. At Torquay there was as much as 237 hours, and at Newquay and the Scilly Isles 20 hours more. Jersey, however, was hardly so bright, its total sunshine scarcely exceeding that at Nottingham. The most equable temperature was at Scilly, where the mean maximum was 56° and the mean minimum 46°, but the range between the warmth of the day and night was only 13° or 14° at Jersey, Newquay, and Torquay, against 18° in London and 21° in the Midlands. Over the country as a whole the brightest and warmest period of the month was a week or so from the 14th, when a cloud was a rarity, and the thermometer mounted to 70° or a little higher. Considered generally, last month was the finest April for many years. Probably none since 1893 has given so many bright, dry days.

Abroad.

All the adjacent countries of the continent shared in the fine weather. At Paris rain fell on only nine days, giving the small total of 0·9 in., while the sunshine was 252 hours, about an hour per day longer than at Kew, the mean maximum temperature was as high as 65°, and the mean minimum 44°. Berlin and Vienna were both less warm than Paris, their respective mean maximum temperatures being 60° and 62° and the mean minima 43° and 42°. Both cities were dry, having little or no rain after the 10th, although their total fall was much higher than in London, the figure being about 1·3 in. The Riviera had practically no rain until the 30th, and at Biarritz rain only fell on seven days. Southern France generally was rather warm for the time of year. At Nice the shaded thermometer rose to 70° or above on several occasions, and the mean maximum was as high as 67°, exceeding that at Biarritz by 3°. The mean minimum, however, 50°, was the same at both resorts, Biarritz thus living up to its character of being more equable than the resort on the Riviera. Throughout Italy the weather was almost continuously fine and dry, rain falling on very rare occasions, and the thermometer pointing to readings which would be considered seasonable in southern England during June. At Rome only four days brought slight rain, and the mean maximum temperature was no lower than 69°. The nights were relatively cool, giving a mean minimum temperature 2° lower than Nice and Biarritz, and only 2° above that at Scilly and Jersey.

The change to dry weather after more than two months of more or less rain nearly daily was due to barometric pressure assuming an anticyclonic distribution in this part of the world in place of the cyclonic condition that is the more usual. Ever since the latter part of January the Atlantic had passed on depression after depression to these islands or their immediate vicinity, but the system which threatened to give a rainy Easter was the last of the series, and during the next three weeks two large anticyclones, which also came from the Atlantic, ruled the weather as they moved in a leisurely manner across the British Isles and the North Sea to the continent. An anticyclone in spring usually gives colder easterly winds in the south of England than those of last month, and is too often accompanied by sharp frost at night. On this occasion the wind had but a moderate cutting capacity, and, considering the many cloudless nights, frost was uncommon.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 97 English and Welsh towns with populations exceeding 50,000 persons at the last Census and whose aggregate population at the middle of this year is estimated at 18,120,059 persons, 9246 births and 4905 deaths were registered during the week ended Saturday, May 16th. The annual rate of mortality in these towns, which had been 15·1, 14·2, and 14·1 per 1000 in the three preceding weeks, was again 14·1 per 1000 in the week under notice. During the first six weeks of the current quarter the mean annual death-rate in these towns averaged 14·6, against 13·8 per 1000 in London during the same period. Among the several towns the death-rate last week ranged from 2·8 in Eastbourne, 6·3 in Cambridge, 6·8 in East Ham, 7·4 in Ilford,

and 7·5 in Southend-on-Sea, to 20·1 in Stoke-on-Trent, 20·4 in Tynemouth, 20·5 in Gateshead, 21·7 in Carlisle, and 23·1 in Dudley and in Middlesbrough.

The 4905 deaths from all causes were 9 in excess of the number in the previous week, and included 421 which were referred to the principal epidemic diseases, against 453 and 436 in the two preceding weeks. Of these 421 deaths, 143 resulted from whooping-cough, 138 from measles, 69 from infantile diarrhœal diseases, 33 from scarlet fever, 31 from diphtheria, and 7 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases last week was equal to 1·2, against 1·3 per 1000 in each of the four preceding weeks. The deaths attributed to whooping-cough, which had been 166, 139, and 146 in the three preceding weeks, fell to 143 last week, and caused the highest annual death-rates of 1·3 in Sheffield, 1·4 in Warrington, 1·7 in Hastings and in Gateshead, 1·8 in Bury, and 2·2 in Walsall. The deaths referred to measles, which had been 140, 155, and 146 in the three preceding weeks, further declined to 138 last week; the highest death-rates from this cause were 1·3 in Salford and in Swansea, 1·4 in Smethwick, in Bootle, and in Burnley, 1·5 in Sheffield, 1·7 in Rochdale, and 2·0 in Dudley. The fatal cases of diarrhœa and enteritis (among infants under 2 years), which had been 66, 59, and 59 in the three preceding weeks, rose to 69 last week; of this number 18 were registered in London, 7 in Liverpool, 5 in Birmingham, and 3 each in Nottingham, Manchester, Leeds, and Middlesbrough. The deaths attributed to scarlet fever, which had been 23, 35, and 27 in the three preceding weeks, rose to 33 last week, and included 8 in London, 4 in Liverpool, 4 in Sheffield, and 2 each in Birmingham, Manchester, Oldham, and Newcastle-on-Tyne. The deaths referred to diphtheria, which had been 40, 50, and 44 in the three preceding weeks, further fell to 31 last week; 5 deaths occurred in London, 3 in Birmingham, 3 in Manchester, and 2 each in Bristol, Bolton, and Rotherham. The fatal cases of enteric fever, which had been 10, 15, and 13 in the three preceding weeks, fell to 7 last week, of which 2 were recorded in London.

The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospitals, which had been 2885, 2876, and 2901 at the end of the three preceding weeks, had declined to 2862 on Saturday last; 349 new cases were admitted during the week, against 305, 377, and 398 in the three preceding weeks. These hospitals also contained on Saturday last 1129 cases of diphtheria, 356 of whooping-cough, 110 of measles, and 44 of enteric fever, but not one of small-pox. The 1157 deaths from all causes in London were 39 fewer than the number in the previous week, and corresponded to an annual death-rate of 13·4 per 1000. The deaths referred to diseases of the respiratory system, which had been 258, 185, and 221 in the preceding three weeks, declined to 191 last week, and were 19 below the number registered in the corresponding week of last year.

Of the 4905 deaths from all causes in the 97 towns, 174 resulted from different forms of violence, and 381 were the subject of coroners' inquests, while 1429 occurred in public institutions. The causes of 39, or 0·8 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and in its 14 suburban districts, in Leeds, Bristol, Bradford, Hull, Newcastle-on-Tyne, and in 56 other smaller towns. Of the 39 uncertified causes of death, 6 were registered in Birmingham, 3 in Stoke-on-Trent, 3 in Liverpool, 3 in Sunderland, and 2 each in Gillingham, Southend-on-Sea, Coventry, Bootle, Preston, Sheffield, and Tynemouth.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,293,200 persons at the middle of this year, 1230 births and 673 deaths were registered during the week ended Saturday, May 16th. The annual rate of mortality in these towns, which had been 16·9, 15·2, and 16·2 per 1000 in the three preceding weeks, declined to 15·3 per 1000 in the week under notice. During the first six weeks of the current quarter the mean annual death-rate in these towns averaged 16·0, against a corresponding rate of 14·6 per 1000 in the 97 large English towns. Among the several towns the death-rate last week ranged from 7·6 in Motherwell, 10·9 in Paisley, and 12·1 in Dundee, to 18·2 in Coatbridge, 22·0 in Ayr, and 23·4 in Clydebank.

The 673 deaths from all causes were 40 fewer than the number in the previous week, and included 56 which were referred to the principal epidemic diseases, against 61 and 64 in the two preceding weeks. Of these 56 deaths, 20 resulted from measles, 18 from whooping-cough, 6 from infantile diarrhœal diseases, 5 from diphtheria, 4 from scarlet fever, and 3 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·3, against 1·2 per 1000 in the 97 large English towns. The deaths attributed to measles, which had been 29, 19, and 31 in the three preceding weeks, fell to 20 last week, of which 13 occurred in Glasgow, 2 in Edinburgh, and 2 in Dundee. The deaths referred to whooping-cough, which had been 9, 13, and 17 in the three preceding weeks, were 18 last week, and included 9 in Glasgow, 3 in Coatbridge, and 2 in Falkirk. The fatal cases of diarrhœa and enteritis (among infants under 2 years), which had been 18, 17, and 4 in the three preceding weeks, rose to 6 last week, and included 2 in Glasgow and 2 in Dundee. The deaths attributed to diphtheria, which had been 9, 8, and 7 in the three preceding weeks, further fell to 5 last week, but showed no excess in any town. The 4 deaths referred to scarlet fever, of which 3 occurred in Glasgow and 1 in Kirkcaldy, were slightly below the average in the earlier weeks of the quarter. Of the 3 fatal cases of enteric fever, 2 were registered in Glasgow and 1 in Kilmarnock.

The deaths referred to diseases of the respiratory system, which had been 130, 90, and 116 in the three preceding weeks, declined to 104 in the week under notice; and 23 deaths resulted from various forms of violence, against numbers declining from 31 to 16 in the three preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland, with an aggregate population estimated at 1,205,280 persons at the middle of this year, 677 births and 421 deaths were registered during the week ended Saturday, May 16th. The annual rate of mortality in these towns, which had been 25·3, 20·6, and 18·6 per 1000 in the three preceding weeks, further fell to 18·2 per 1000 in the week under review. During the first six weeks of the current quarter the mean annual death-rate in these towns averaged 20·9 per 1000; in the 97 large English towns the corresponding rate did not exceed 14·6, while in the 16 Scotch towns it was equal to 16·0 per 1000. The annual death-rate last week was equal to 19·5 in Dublin (against 13·4 in London and 16·7 in Glasgow), 17·6 in Belfast, 21·1 in Cork, 12·7 in Londonderry, 10·8 in Limerick, and 19·0 in Waterford, while in the 21 smaller towns the mean rate was 18·1 per 1000.

The 421 deaths from all causes were 10 fewer than the number in the previous week, and included 43 which were referred to the principal epidemic diseases, against numbers steadily declining from 75 to 47 in the four preceding weeks. Of these 43 deaths, 21 resulted from measles, 9 from infantile diarrhœal diseases, 8 from whooping-cough, 2 from scarlet fever, 2 from diphtheria, and 1 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases last week was equal to 1·9, against corresponding rates of 1·2 and 1·3 per 1000 in the English and Scotch towns respectively. The deaths attributed to measles, which had been 37, 45, and 30 in the three preceding weeks, further declined to 21 last week, of which 17 occurred in Dublin and 3 in Belfast. The deaths of infants (under 2 years) referred to diarrhœa and enteritis, which had declined from 10 to 3 in the four preceding weeks, rose to 9 last week, and included 5 in Dublin and 3 in Belfast. The fatal cases of whooping-cough, which had fallen from 14 to 9 in the four preceding weeks, were 8 last week, of which 5 were recorded in Belfast. The 2 deaths from scarlet fever were recorded in Belfast, and were 2 below the average in the earlier weeks of the quarter. The fatal cases of diphtheria occurred in Lisburn and Kilkenny, and that of enteric fever in Dublin.

The deaths referred to diseases of the respiratory system, which had declined from 115 to 74 in the four preceding weeks, rose to 86 in the week under notice. Of the 421 deaths from all causes, 132, or 31 per cent., occurred in public institutions and 12 resulted from various forms of violence. The causes of 16, or 3·8 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 97 large English towns the proportion of uncertified causes did not exceed 0·8 per cent.

ASYLUM WORKERS' ASSOCIATION.—At the annual meeting of this association, which was held on May 20th, at the Medical Society's House, Chandos-street, W., under the presidency of Sir John Jardine, K.C.I.E., M.P., it was stated in the annual report that there had been a falling off in membership. Reference was made to the Mental Deficiency Act, 1913, and the hope expressed that many of the workers employed under the new Act would realise the advantage of protecting their interests by joining the association. The society exists for the purpose of raising the status of asylum nurses and attendants and of promoting their general welfare. The address of the secretary is 8, Lancaster-place, Hampstead, N.W.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

Staff-Surgeon John Neil Robertson has been promoted, for conspicuous professional merit, to the rank of Fleet-Surgeon in His Majesty's Fleet (dated May 15th, 1914). Surgeon James Leslie Barford has been promoted to the rank of Staff-Surgeon in His Majesty's Fleet (dated May 19th, 1914), and Surgeon Richard Connell has been promoted to the rank of Staff Surgeon in His Majesty's Fleet (dated May 14th, 1914).

ROYAL NAVAL VOLUNTEER RESERVE.

The undermentioned has been appointed Surgeon: Stanley Henry Scott (dated May 15th, 1914).

ARMY MEDICAL SERVICE.

Surgeon-General Sir A. T. Sloggett, C.B., C.M.G., has been granted leave of absence until June 1st, when he will take over the duties of Director-General of the Army Medical Services from Sir William Launcelotte Gubbins, K.C.B., M.V.O., who will be retired.

ROYAL ARMY MEDICAL CORPS.

Colonel J. Maher has been appointed Deputy Director of Medical Services to the Gibraltar Command. Brevet-Colonel S. Hickson has taken up duty as Inspector of Medical Services on the Headquarters Staff at the Horse Guards.

Lieutenant-Colonel C. A. Young has been transferred from Shrewsbury to the Chatham District. Lieutenant-Colonel R. H. Hall has been appointed to the Southern Command. Lieutenant-Colonel D. M. O'Callaghan has been appointed to hold charge of the Military Hospital at Dover. Lieutenant-Colonel F. R. Newland has been appointed to hold charge of the Military Hospital at Colchester. Lieutenant-Colonel M. P. C. Holt, D.S.O., has arrived home from India. Lieutenant-Colonel B. J. Inniss has been appointed to hold charge of the Military Hospital at Delhi Cantonment. Lieutenant-Colonel N. Faichnie has been appointed Senior Medical Officer at Preston. Lieutenant-Colonel G. A. T. Bray has been appointed Senior Medical Officer in charge of the Royal Hospital, Chelsea. Lieutenant-Colonel C. W. H. Whitestone has arrived home for duty from Lahore. Lieutenant-Colonel S. G. Moores has taken over charge of the Military Hospital at Warley.

Major G. J. A. Ormsby has arrived home from India. Major J. C. B. Statham has been appointed to the London District. Major A. H. Safford has been appointed to the Eastern Command. Major W. L. Baker has been appointed to the Medical Recruiting Staff in the London District. Major W. M. B. Sparkes has taken up duty in the Sierra Leone Protectorate. Major W. L. Bennett has been transferred from Pontefract to Halifax. Major T. B. Unwin has arrived home from the Sierra Leone Protectorate. Major J. G. Gill has been appointed to the Southern Command. Major F. E. Gunter has arrived home from Meerut Cantonment. Major J. C. Kennedy has been appointed to the Military Hospital at Lucknow Cantonment. Major R. L. Popham has embarked for India. Major L. Addams-Williams has been transferred from Tidworth to Karachi Cantonment. Major H. P. W. Barrow has been appointed to the London District. Major W. J. Taylor has been appointed to officiate as Senior Medical Officer to the Sierra Leone Protectorate during the absence on leave of Lieutenant-Colonel J. J. Gerrard. Major V. G. Crawford has arrived home for duty from Mauritius. Major C. E. W. S. Fawcett has been transferred from the Military Hospital at Queenstown to the Indian Establishment. Major H. C. Winckworth has relinquished charge at Woolwich. Major S. O. Hall has been appointed to the Military Hospital at Rangoon.

Captain W. Mitchell has been appointed to the Western Command. Captain B. A. Odlum has been transferred from Simonstown to Bloemfontein. Captain D. McGrigor has joined at Agra. Captain J. Startin has been granted six months' leave of absence home from India. Captain J. J. H. Beckton has been appointed to the Military Hospital at Sialkot Cantonment. Captain J. M. M. Crawford has taken up duty at Ipswich as Adjutant to the Royal Army Medical Corps School of Instruction. Captains E. B. Booth and G. Ormrod have embarked for a tour of service in the Sierra Leone Protectorate. Captain A. H. Heslop has been appointed to the Aldershot Command. Captain A. G. Wells has arrived home from India. Captain W. J. E. Bell has taken up duty in the London District. Captain M. Keane has embarked for India. Captain D. De C. O'Grady has arrived home from India. Captain A. M. Bennett has been appointed to hold charge of the Military Hospital at Newport. Captain P. Davidson, D.S.O., has taken up duty in Aldershot as Adjutant to the Royal Army Medical Corps Depôt. Captain P. S. Stewart has arrived home from Malta. Captain J. A. Bennett has been appointed to the Military Hospital at Cork. Captain F. W. M. Cunningham has been appointed Staff-Surgeon to Headquarters at Sialkot Cantonment. Captain D. M. Corbett has been appointed to the Military Hospital at Ambala Cantonment. Captain A. W. Gater has joined the Military Hospital at Winchester. Captain W. F. M. Loughnan has arrived home from India. Captain G. A. D. Harvey has been appointed Specialist in Physical Training to the Staff of the Royal Army Medical College. Captain T. E. Harty has been appointed to hold charge of the Military Hospital at Wonkufu, West Africa. Captain E. T. Gaunt has joined at Malta. Captain A. C. Amy has arrived home from Agra Cantonment. The following captains have been placed under orders to join the Royal Army Medical College for the next session for promotion to the rank of Major:—A. E. G. Frazer, A. M. Pollard, W. B. Purdon, G. F. Rudkin, O. C. P. Cooke, J. du P. Langrishe, and W. I. Thompson. Captain M. J. Cromie has taken up duty in the Sierra Leone Protectorate. Captain E. Gibbon has joined the Egyptian Army. Captain J. R. Foster has arrived home from the Military Hospital at Neemuch Cantonment. Captain H. J. Crossley has been appointed to the Military Hospital at Bareilly Cantonment. Captain T. H. Gibbon has been appointed Pathologist to the Military Hospital at Dublin. Captain A. Hendry has taken up duty at Colaba, Bombay. Captain A. G. Cummins has been appointed to the Egyptian Army. Captain J. H. Gurley has been appointed Specialist in Ophthalmology to the Royal Victoria Military Hospital at Netley. Captain R. C. Hallowes has joined at Holywood. Captain G. F. Dawson has been appointed to the Military Hospital at Bareilly Cantonment. Captain N. E. J. Harding has been appointed to hold medical charge at the Tower of London. Captain W. D. Kelly has taken up duty at Pretoria as Specialist in Advanced Operative Surgery. Captain G. A. Kempthorne has been placed in medical charge at Tregantle. Captain C. R. Millar has joined at Ballincollig. Captain C. H. Denyer has been appointed to the Military Hospital at Agra Cantonment. Captain F. T. Dowling has been appointed to hold charge of the Cantonment General Hospital at Nowshera. Captain S. W. Kyle has joined at Jubbulpore.

Lieutenant T. A. Weston has been selected for appointment as Specialist in Advanced Operative Surgery to the Eighth (Lucknow) Division of the Northern Army in India. Lieutenant T. C. R. Archer has taken up duty at Hong-Kong. Lieutenant T. H. Balfour has been appointed to hold charge of the Military Hospital at Inverness. Lieutenant S. J. Higgins has joined at Lucknow. Lieutenant W. O. W. Ball has been appointed to the Military Hospital at Longmoor Camp. Lieutenant A. Hood has taken up duty at the Military Hospital, Rawal Pindi Cantonment. Lieutenant S. D. Large has been appointed to hold charge of the Reception Hospital at Aldershot. Lieutenant S. P. Sykes has been appointed to the Military Hospital at Jutogh Cantonment.

INDIAN MEDICAL SERVICE.

The King has approved the promotion of the following officers:—Lieutenant-Colonel to be Colonel: Thomas Edward Dyson (dated Jan. 10th, 1914). Captains to be Majors (dated Jan. 26th, 1914): James McPherson, George Denne Franklin, Charles Aikman Gourlay, Robert Archer Lloyd, John Conrad Gie Kunhardt, Ernest Alexander Walker, Lewis Cook, Leonard Bodley Scott, Gerard Irvine Davys, William Leigh Trafford, Howard Crossle, Edward Charles Cecil Maunsell, John Warwick Illius, and John Philip Cameron.

The promotion of James Jackson Robb and Shaik Abdur Ruzzak to their present rank of Major is antedated from Jan. 29th, 1913, to July 29th, 1912.

The King has approved the retirement of the undermentioned officers: Colonel Robert Bradley Roe (dated May 15th, 1914), Lieutenant-Colonel Joseph Rosamond Adie (dated March 22nd, 1914), and Lieutenant-Colonel Herbert Wilson Pilgrim (dated May 11th, 1914).

Surgeon-General W. Babtie, V.C., C.B., C.M.G., British Service, has been appointed Director, Medical Services, vice Surgeon-General Sir A. T. Sloggett, C.B., C.M.G., British Service (dated March 22nd, 1914).

Colonel R. Robinson has taken up duty as Assistant Director of Medical Services to the Kohat Brigade.

Lieutenant-Colonel F. J. Drury has been appointed Inspector-General of Civil Hospitals in Behar and Orissa. Lieutenant-Colonel T. W. Irvine has been appointed to hold civil medical charge at Peshawar. Lieutenant-Colonel J. G. Hojel has arrived home on leave of absence from India. Lieutenant-Colonel W. D. Sutherland has been appointed for special duty as Serologist at Calcutta. Lieutenant-Colonel J. L. Macrae has been appointed Civil Surgeon at Coorg. Lieutenant-Colonel L. F. Childe has been granted three months' extension of leave of absence home from India on medical certificate. Lieutenant-Colonel W. E. Jennings has been appointed to officiate as Assistant Director of Medical Services to the Bombay Brigade. Lieutenant-Colonel P. Carr-White has joined for duty in Nepal.

Lieutenant-Colonel J. Morwood has been appointed to Shahjahanpur.

Major W. H. Leonard has arrived home on combined leave of absence from India. Major H. B. Steen has been placed in civil medical charge at Murshidabad. Major W. W. Clemesha, Sanitary Commissioner to the Presidency of Bengal, has been allowed combined leave of absence home from India for two years. Major V. B. Bennett has been appointed to Hyderabad, Sind, as Civil Surgeon and Superintendent of the Lunatic Asylum. Major F. D. S. Fayrer has been granted two months' extension of leave of absence home from India. Major R. F. Baird has been appointed to Gonda on transfer from the Central Research Institute at Kasauli Cantonment. Major I. M. Wooley has taken up duty at Dacca as Superintendent of the Central Jail.

Captain C. A. F. Hingston has been appointed to officiate as Professor of Midwifery at the Government Medical College, Madras, and Superintendent of the Maternity Hospital. Captain F. N. White has been appointed to officiate as Assistant to the Director-General. Captain C. J. Brierley has been placed on general duty in the Peshawar District. Captain O. Berkeley Hill has been transferred from Lahore to Bombay. Captain C. A. Gourlay has been appointed to officiate as Civil Surgeon at Chittagong. Captain T. C. McCombie Young has taken up duty in Assam as Deputy Sanitary Commissioner. Captain R. A. Lloyd, medical officer of the 21st Punjabis, has been appointed to officiate as Civil Surgeon and Superintendent of the Jail at Belaspur. Captain J. Forrest has been appointed District Medical and Sanitary Officer at Kistna. Captain H. M. H. Methuish, plague medical officer in the Punjab, has been granted six months' leave of absence home from India. Captain W. J. Collinson has taken up duty as Plague Medical Officer at Meerut.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Lieutenant William R. Gardner to be Captain (dated May 18th, 1914). Cadet James O'Brien, from the Royal College of Surgeons in Ireland Contingent, Officers Training Corps, to be Lieutenant, on probation (dated March 26th, 1914). Cadet Sergeant Alexander Caulfield Jebb, from the Glasgow University Contingent, Officers Training Corps, to be Lieutenant, on probation (dated April 24th, 1914). Cadet Sergeant James Couper Brash, from the Leeds University Contingent, Officers Training Corps, to be Lieutenant, on probation (dated April 17th, 1914). Cadet (late Cadet Colour-Sergeant) Francis George Macnaughton, from the Edinburgh University Contingent, Officers Training Corps, to be Lieutenant, on probation (dated April 29th, 1914).

The undermentioned officers resign their commissions (dated April 3rd, 1914): Captain Clarence E. Greeson, Lieutenant Gerald M. Graham, and Lieutenant Henry B. Parker.

TERRITORIAL FORCE.

Royal Army Medical Corps.

2nd South-Western Mounted Brigade Field Ambulance, Royal Army Medical Corps: Henry Norman Barnett to be Captain (dated May 16th, 1914). John Munro Dupont to be Captain (dated May 16th, 1914).

3rd South Midland Field Ambulance, Royal Army Medical Corps: Captain Bertram M. H. Rogers to be Major (dated May 16th, 1914).

2nd London Sanitary Company, Royal Army Medical Corps: Lieutenant William A. Berry resigns his commission (dated May 20th, 1914).

For Attachment to Units other than Medical Units.—John Douglas Staley to be Lieutenant (dated Jan. 22nd, 1914). Lieutenant Charles L. Fraser resigns his commission, and is granted permission to retain his rank and wear the prescribed uniform (dated May 16th, 1914).

Attached to Units other than Medical Units.—Lieutenant Owen J. Parry-Edwards resigns his commission (dated May 20th, 1914).

ROYAL NAVY MEDICAL CLUB.

The annual dinner of the Royal Navy Medical Club was held at Prince's Restaurant, Piccadilly, on May 15th, when Surgeon-General Christopher Pearson presided. The guests of the club included Admiral H.S.H. Prince Louis of Battenberg, Vice-Admiral Sir John R. Jellicoe, Sir W. Watson Cheyne, Sir Dyce Duckworth, and Sir John Tweedy. The following members were present:—Surgeons-General: A. W. May, C.B. (Director-General Medical Department), Sir J. Porter, K.C.B. (late Director-General Medical Department), A. J. J. Johnston, J. J. Dennis, W. H. Norman, J. L. Barrington, and W. M. Craig, C.B. Inspector-General: B. Ninnis, C.V.O. Deputy Surgeons-General: G. Welch (Deputy Director-General Medical Department), P. B. Handyside, H. W. G. Doyne, G. A. Dreaper, C. J. Mansfield, M.V.O., and V. G. Thorpe. Deputy Inspector-General: E. A. Jeans. Fleet-Surgeons: P. W. Bassett-Smith, C.B., A. F. Harper, H. B. Beatty, J. Moore, D. J. P. McNabb, C. Strickland, G. T. Broatch, J. D. Hughes, G. A. Waters, J. Shand, W. A. Whitelegge, E. H. Hodnet de Courtmacsherry, R. Hill, C.V.O., F. W. Parker, R. C. Munday, A. Gaskell, E. J. Finch, M. L. B. Rodd, C. L. W. Bunton, P. H. Boyden, E. T. P. Eames, M. P. Jones, W. S. H. Sequeira, W. L. Martin, D. W. Hewitt, F. H. Nimmo, E. Sutton, G. B. Kennedy (retired), F. D. Lumley (retired), J. W. O. Underhill (retired), and J. E. Coad. Staff-Surgeons: R. W. G. Stewart, P. D. Ramsay, L. Warren, E. Cox, J. H. Rooney, H. B. Shewell, A. F. Fleming, A. K. Smith Shand, J. S. Dudding, B. Pick, and A. D. Cowburn, R.N.V.R. Surgeons: A. G. Malcolm, G. M. Levick, G. F. Syms, K. H. Hole, T. R. Lloyd Jones, H. C. Devas, H. F. Briggs, A. T. Rivers, G. A. Jackson, J. Barrett, M. P. Fitzgerald, H. W. Nicholls, Campbell Ross, F. L. Smith, E. D. Macnamara (retired), W. N. Pickles, R.N.V.R., W. F. Fedden, R.N.V.R., and P. D. Pickles, R.N.V.R.

BRITISH SCIENCE GUILD.—The annual meeting of the British Science Guild will be held at the Mansion House to-day (Friday, May 22nd), at 4 P.M., the Lord Mayor presiding. Sir Ronald Ross will deliver an address, and other speakers will include the President of the Guild, the Right Hon. Sir William Mather. The annual dinner will be held at 7 P.M. at the Trocadero Restaurant.

EDINBURGH UNIVERSITY CLUB OF LONDON.—The jubilee dinner of this club was held on May 13th in the Grand Hall of the Hotel Cecil under the chairmanship of Lord Balfour of Burleigh. There was a large company, which included many members of the medical profession. Among those who supported the chairman were Sir William Turner, M.D. (Principal of the University of Edinburgh), Sir Archibald Geikie (late President of the Royal Society), Sir Dyce Duckworth, Sir Lauder Brunton, Surgeon-General Sir Launcelot Gubbins, Sir Robert Finlay, K.C., Sir W. Watson Cheyne, Sir StClair Thomson, Sir Henry Craik, Dr. Graham Brown (President of the Royal College of Physicians of Edinburgh), Professor F. M. Caird (President of the Royal College of Surgeons of Edinburgh), Surgeon-General A. W. May (Medical Director of the Navy), Dr. Robert Farquharson, P.C., Mr. Harold Stiles, Dr. Byrom Bramwell, and Dr. J. T. C. Laing and Dr. L. F. Knuthsen (honorary secretaries of the club). The Chairman, in submitting the toast of the Edinburgh University Club of London, spoke of the loss which it had suffered through the recent death of the Duke of Argyll. Referring to the services rendered by the club to the University, he pointed out that in commemoration of its jubilee the club, which now had a membership of 600, had decided to make a contribution of £500 towards the Lister Memorial Institute of Science now being established in Edinburgh. A better tribute to one of the noblest men who had ever adorned the great profession so largely represented at that dinner could not be devised or carried out. Lord Balfour coupled with the toast the name of Sir Dyce Duckworth, the only surviving original member of the club. Sir Dyce Duckworth, in response, recalled that the club had its origin in 1864 in a group of friends who met at 77, Manchester-street. He hoped the club would always preserve the spirit of loyalty to the *alma mater*. The influence of hard work in the atmosphere of Edinburgh raised the ordinary man and left its mark on him for the rest of his days. The toast of "The Guests" was proposed in graceful terms by Sir Robert Blair, chief education officer to the London County Council. The response was entrusted to Sir William Turner, who was very warmly received. He was that night, he said, in the position of representing their academic parents, and as such he offered the club felicitations upon reaching its fiftieth year. Referring to the contribution to the Edinburgh Lister Memorial, Sir William Turner paid an eloquent tribute to the memory of Lister, whom they honoured not only as a great leader but for his personal character, for no man had a more simple, more beautiful nature: he had taken his place among the immortals. The toast was also responded to by Mr. Edmund Gosse and Mr. G. A. S. Gordon. The health of the chairman was proposed in an amusing speech by Dr. George Ogilvie, who dwelt on the varied abilities of Lord Balfour and his distinguished public services, and in particular on the advantage which it had been to him to hail from the ancient kingdom of Fife. The proceedings concluded with the chairman's reply.

MEDICAL PRACTICE UNDER THE INSURANCE ACT.

(BY OUR SPECIAL COMMISSIONER.)

(*Continued from p. 1418.*)

XLVI.—COLCHESTER.

COLCHESTER is a quiet town with many fine old houses and some ruins that testify to its antiquity. It is an old-fashioned country town, and a military and social rather than an industrial centre. But there are some industries. There are, for instance, engineering and cloth works, and in connexion with the latter some difficulty is presented from the health point of view, as the number of home workers is large. A considerable portion of the work is in the making of "shoddy" clothes, given out for many miles round to cottagers. The cloth is converted into clothes in these private, unwatched, and uncontrolled dwellings. Will the well-known abuses associated with the home and piecework systems be better controlled and checked now that many of these home workers, being employed persons, are under the Insurance Act? Certain it is that already numerous cases of latent illness have been brought to the front and there is now medical treatment where formerly there was nothing but neglect.

Colchester has a population of 43,500; therefore it has not an Insurance Committee of its own, but depends on the Essex Insurance Committee. This body, as mentioned when dealing with Southend, meets in London, and the getting backwards and forwards to London for this and other committees constitutes a serious administrative difficulty. There is a local insurance area, which corresponds roughly with the North-East Essex Division of the British Medical Association, and in 1912 the practitioners in this area fought against the proposed insurance legislation. Many well-attended meetings were held, and out of about 60 members of the profession from 30 to 40 were generally present, which was creditable considering the great distances some of them had to travel in a county where railways are scarce. They discussed not merely the financial and professional aspects of the proposals, but especially whether its effects would be good or bad for the public. In regard to the financial question, great difference of opinion prevailed. Some practitioners said that it would pay very well to have the extension of contract practice, and others thought that there would be serious loss on the whole, but at least 90 per cent. of the profession were convinced that the proposed law would degrade medical science, and consequently be to the public detriment. With the one or two exceptions of practitioners entirely dependent on club patients, the money side of the question did not disturb these Essex doctors. Several among them expressed their readiness to lose all their club patients, though these in more than one case exceeded 1000 in number. Nevertheless, they were willing to put up with a considerable financial loss rather than lose their independence by observing the Act. Thus, when the Representative Meeting of the British Medical Association met in London in December, 1912, the Colchester delegate went up with full instructions to vote against working the Act. Most of his co-delegates from all parts of the country had similar instructions. Speaking to me, the Colchester representative described the extraordinary enthusiasm which prevailed when the Representative Body voted that the Act was derogatory to the profession. He returned to Colchester profoundly impressed that the Act was shattered and would never come into force.

How Colchester Capitulated.

There was, however, an early awakening from such illusions. Almost immediately after the representative meeting, and in spite of its brave decision, it was found that many were shaky in their alliance. Medical men in outlying country districts were reported as desirous of going on the panel, and rumour, assisted by advertisement, reported huge rushes of medical men on to the panels in various parts of the country. These newspaper reports greatly perturbed the profession. The country doctors who were in the strongest position, for they had no cause to fear that doctors would be imported to take their place, were to some extent won over by the permission, the very necessary permission, to dispense, so that they would receive the entire sum set aside for medical benefit. But in the countryside, if importations were not feared, yet every local practitioner was bound to be influenced by what his neighbours might do. All the men in the Colchester area protested their willingness to hold out, if no one in the neighbouring areas gave way. The rural doctors were the first to give way, and this because of the overlapping of practices established in districts outside the Colchester area. It was, therefore, from the circumference to the centre that defeat spread. Some country doctors were absolutely consistent in their opposition, while the town doctors stood out till well into January, 1913. Early in that month a meeting of the town practitioners was held, and here again it was decided unanimously not to go on the panel. Though this decision would mean the absolute ruin of one or two practitioners, still all were quite firm in the determination to resist. Then came the celebrated message, which has become an historical event, received by Dr. Leigh Day from Mr. Worthington Evans, M.P. The latter telephoned, inquiring what the Colchester doctors were going to do, and received the prompt reply that they were going to fight. Mr. Worthington Evans thereupon expressed his doubts as to the wisdom of this course, and explained that the Government was going to make an example of certain towns of moderate size. The result was that Mr. Worthington Evans came down to Colchester on the next day to tell what he knew about the proposed Government action. Another meeting of practitioners was held which sat for three hours. It was then seen that resistance was useless, but in revoking their former decision it was urged that the best way to mitigate the evils of the Act was for everyone to go on to the panel. As this resolution was adopted on a Saturday afternoon motor cars were sent round all Sunday to warn those who had not been able to attend the meeting. The profession proved as united in accepting the Act as they had been in resisting the Act, and this is in itself a matter of congratulation for them. They yielded when they could hardly do otherwise, and they so yielded as to leave little material for internal recrimination.

The Financial Results of the Act.

There can be no doubt that the fight has done an enormous amount of good in bringing the members of the profession together. Never before had they experienced such trying times, they were not all of one mind even when loyalty made them espouse a common cause, and to-day no bitterness of feeling or

resentment prevails. It must be confessed that the financial results, by creating an agreeable surprise to many of them, have conduced to harmony. Only two doctors in the town and one in the outside or rural part for the Colchester insurance area have not gone on the panel. The probability is that they have experienced some loss, as some of their patients have been compelled to insure under the Act. The great majority of practitioners are satisfied with the financial results. Those who had many club patients have not found that these patients profited by the freedom of choice to leave their old club doctors. The club doctors have not lost patients, but are much better paid by these patients and have got others who were not members of clubs. Therefore their financial position has improved.

I will take a firm of three doctors as a concrete example of financial results. They had not many club patients. One of the three partners had no club patients and no contract work whatsoever. He now has a list of 450 insured patients, and about 200 of these were formerly private patients. His partners did have club patients, about 300 to 400, and they now have instead some 600 to 700 insured persons each, but many of these used to pay fees for advice. Altogether the three partners received under the Act for the first year £700. This is an increase of £350 over their former takings from the same sources, but 1912 was, as it happened, a bad year and 1913 an exceptionally good one, so they do not reckon on a permanent average increase of more than about £100. If this is not much when divided by three partners, nevertheless they can safely say that not only have they lost nothing, but they can rely apparently on at least a small improvement. This is a typical example of the all-round experience. The feeling is that it does pay to have a list of insured persons, and everybody at Colchester is satisfied with the financial aspect of the Act; but many practitioners still hate the sort of work they have to do, though some admit that in this direction the working of the Act is not as bad as they had anticipated.

The Medical Committee and the Commissioners.

The Act, it seems, if I may trust some of the opinions expressed here, is good enough, but the administration is very bad. One of my informants, speaking as a practitioner, expressed himself as quite satisfied; but as chairman of the Local Medical Service Subcommittee and as chairman of the Panel Committee he was very dissatisfied. The work they had to do after communication with the Commissioners was unsatisfactory through no fault of theirs, he considered. The replies they received came too late, and had on occasion been contradictory—complaints which have been made to me elsewhere. Colchester claims that it was the first town in Essex to form a Local Medical Committee. Very soon after its formation a scheme for the re-election was, in keeping with the requirements, duly drawn up. This was forwarded to the Commissioners 15 months ago, who did not reply.

As there are only three practitioners in the Colchester area who are not on the panel, it will be seen that practically the election of the Medical Committee and the Panel Committee depends on the vote of the same persons. Local opinion was opposed to duplication, and wanted the elections for the two committees to take place at the same time, resulting probably in the return of the same candidates for the two committees and the assimilation of their work. The Medical Committee of course was elected and at work long before there was any question of a Panel Committee, and the Medical Committee did its work so well that medical benefit was working better in Essex than in most places, yet there seemed to be an antagonism on the part of the Commissioners towards the Medical Committee. So much so that though, as a matter of form, questions were sent by this committee to the Commissioners, the committee had given up expecting favourable replies, said my informant. Moreover, it has not been admitted that the members of the Medical Committee have any right to claim their railway expenses. These amounted to £40, which if divided amongst the 484 practitioners of the Essex panels would not amount to 2*s.* each. Laymen who are on the Essex Insurance Committee are paid their expenses; medical men who are elected members of the Essex Medical Committee, formed in accordance with the Act, have to pay all their expenses out of their own pockets. Yet both are administrative expenses.

Administrative Difficulties.

Then there is a financial difficulty at Colchester, which may have arisen elsewhere, but which I have not before come across that I remember. The secretary of the Medical Committee is a medical practitioner and a member of that committee. Out of a voluntary levy he was paid a certain sum a year for his work as secretary. Now, and as both committees consist of the same persons, he is secretary of the Panel Committee. The Panel Committee, being an administrative committee, has a right to claim payment for its expenses out of the insurance funds. Thus it was hoped that the ½*d.* to be taken from the floating sixpence would go to pay the secretary's salary. But the Commissioners have replied that no member of a committee is to receive a salary. The secretary must retire from the committee if he is to be the paid secretary of the committee. He would therefore not be able to bring forward urgency motions or take any initiative in the work which he has been managing since the Act came into force. There is far too much work for any panel doctor to act as secretary for the Panel Committee unless he is remunerated. In a word, the Act is no longer attacked or criticised; it is the administration, especially that which is carried out centrally by the Commissioners, which is the object of most of the fault-finding.

(*To be continued.*)

THE INTERNATIONAL SURGICAL ASSOCIATION.

(FROM OUR OWN CORRESPONDENT.)

(*Concluded from p. 1345.*)

Gastric and Duodenal Ulcers.

A DISCUSSION on the production and treatment of gastric and duodenal ulcers was opened on Tuesday, April 14th, by Dr. A. LAMBOTTE (Brussels), who said that it had been clearly established that pyloric exclusion constituted an important supplementary procedure to gastro-enterostomy. Of all the methods devised to effect this exclusion the simplest was by ligature of the pylorus. He described the procedure and said that its great advantage was its extreme simplicity, only taking a few seconds. As for peptic ulcers, Dr. Lambotte believed that it was necessary to seek their origin in the operative technique which had been followed rather than in the pathological disposition of the patient. In

addition to those whose remarks are summarised, Dr. BLOCK (Copenhagen), Dr. KÜMMEL (Hamburg), Dr. ULLMANN (Vienna), Dr. MANNIGER (Budapest), Dr. ZAHRADINCKY and Dr. KEYNSKI (Russia) took part in a most valuable discussion.

Dr. CHARLES L. GIBSON (New York), who spoke in French, cited statistics collected by Dr. D. R. Turnure from the Hudson Street, Roosevelt, and St. Luke's Hospitals, regarding the outcome of operations on patients suffering from gastric and duodenal ulcers during the past 18 months.

Dr. SONNENBURG (Berlin), referring to the diagnosis of gastric or duodenal ulcer, said that this was by no means an easy matter. The speaker commenting on the value of radioscopy said that, according to Max Cohn, contraction and too rapid emptying of the stomach were in no sense pathognomonic but only accompanying symptoms of gastric and duodenal ulcer, but that retention of bismuth in the duodenum was significant. Abnormal gas formation in the duodenum was of special import, especially gas bubbles in the first portion of the duodenum. In his personal experience the bismuth test had not been absolutely reliable. The majority of medical men in Berlin agreed that the diagnosis of duodenal ulcer remained a probable rather than an absolute diagnosis. With regard to the relative frequency of gastric and duodenal ulcer their experience was at variance with that of American surgeons. In his series of cases there were 13 duodenal and 67 gastric ulcers. The information given by Moynihan and American surgeons had assisted him in making a diagnosis in many instances.

Dr. BRÜNING (Giessen) said that the symptom-complex described by Moynihan occurred in many cases of ulcer of the stomach, but was absent in others. There was no way in which one could be absolutely certain as to the situation of the ulcer. The von Eiselsberg Ausschaltung method of operation was undoubtedly the best.

Dr. ARTHUR D. BEVAN (professor of surgery at the University of Chicago) referred to the experiments of his colleague, Dr. Edward C. Rosenow, with regard to the origin of gastric and duodenal ulcers and the transmutation of certain bacteria under certain conditions. These experiments in producing artificial ulcers in animals were based upon an earlier series of experiments. Dr. Rosenow had taken certain strains of bacteria and injected them intravenously into animals and produced endocarditis. He then took the same bacteria and cultivated them in a different medium, and the strain so produced, when injected into animals intravenously, invariably brought about inflammatory infectious lesions of the joints. The conclusion was that each strain possessed a selective action for some distinctive type of tissue. Proceeding on this principle, he isolated bacteria from the exudate of gastric and duodenal ulcers, cultivated them in other media, and by injecting them intravenously into animals set up gastric and duodenal ulcers. Dr. Bevan remarked that the result of Dr. Rosenow's investigations were extremely suggestive.

Dr. JOHN B. MURPHY (Chicago) corroborated Dr. Bevan's account of Dr. Rosenow's investigations. Rosenow, he said, appeared to have shown that a single strain of streptococcus will by change of environment alter its character and will, when injected into animals under suitable conditions, bring about endocarditis, inflammatory infectious lesions of the joints, and acute gastric and duodenal ulcers and probably other diseases. Dr. Murphy gave it as his opinion that gastric ulcers were caused by infection in other parts of the body, and pointed out that such ulcers were more prevalent at that period of the year when infections of the respiratory tract were rife. Commenting upon the button which goes by his name, Dr. Murphy said that he still used it; not, however, the round button, but an oblong button which he introduced ten years ago.

Dr. HOWARD LILIENTHAL (New York) said that when conditions were favourable he excised ulcer-bearing areas at once. When, however, there was a large indurated mass near the pylorus a large operation was necessary to remove it. In such a case he first did a gastro-enterostomy near the pylorus and close to the median line, and afterwards, when the patient had recovered strength, he performed a pylorectomy. In ulcer of the stomach with indurated deposits he therefore performed a two-stage operation.

Dr. A. GERSTER (New York) drew attention to the danger of infection resulting from the use of sutures, and emphasised the fact that medical treatment of gastric and duodenal ulcers was as important as surgical measures.

Dr. ALBERT OCHSNER (Chicago) said that gastric and duodenal ulcers were due in the large majority of cases to the habitual abuse of normal feeding which gave rise to the long-continued irritation of hyperacidity. Dietetic and medical treatment would often effect a cure.

Dr. RODMAN (Philadelphia) considered that while patients suffering from gastric or duodenal ulcers made a recovery after operation, in many instances they were not cured. Even more radical treatment was indicated. It was difficult to diagnose correctly between ulcer and cancer of the stomach. He thought the reason why medical men did not perform pylorectomy or excision of ulcers of the gastro-intestinal tract more frequently was the exaggerated idea of the gravity of these operations. From statistics he had collected he was more than ever convinced that the operations were less dangerous by far than was generally supposed. He agreed with Lilienthal that if a two-stage operation were more commonly practised the mortality could be considerably decreased. His experience had taught him that ulcers at the pylorus most often became malignant, but that such an occurrence in other parts of the stomach was rare. On the whole, he considered that pylorectomy was the most effective operation.

Dr. WILLIAM J. MAYO (Rochester, Minn.) preferred a one-stage operation. Speaking of Dr. Rosenow's findings, he said that investigations in the same direction were going on at St. Mary's Hospital, Rochester, but he wished to point out that although Rosenow had produced acute ulcers in animals he had not produced chronic ulcers. Acute gastric and duodenal ulcers seldom became chronic, and as carcinoma never developed at the bases it must be grafted on.

On Wednesday, April 15th, a discussion was opened on

Grafts and Transplantation.

The plastic art of surgery is not so highly developed in America as in France and in some other parts of Europe, and to many present the papers read were a revelation. Especially was the audience impressed by the paper and illustrations of Dr. Lexer (Jena), who is well known as a pioneer in this branch of surgery. Dr. Lexer told of successful joint transplantations done by him, and pointed out that substitution of half a joint can be as easily accomplished as that of an entire joint, and said that the possibility of organic incorporation of a transplanted joint taken freshly from man had been proved. He held that his mission consisted in establishing the practical value of grafting on the basis of his own personal work and experience. His conclusions were as follows:—

The value of the various tissues employed for grafting was differently appreciated by practitioners and by pathologists. An excellent clinical result might be obtained not only if the graft, in taking, preserved its entire structure, but also if it disappeared slowly giving place to substitution tissues or was completely surrounded by adhesions. The circumstances of clinical failures must be taken into account. The graft might be expelled by a violent reaction or disappear in a slowly progressive suppuration, or small blood-clots might prevent the nourishment of the transplanted part from becoming established. The conditions necessary for obtaining a good implantation were vitality, nutrition, powers of acclimatisation, and the condition of the wound on which the implantation was made. Scrupulous asepsis must be observed. Dr. Lexer pointed out as new the simple transplantation of the skin without epidermis, and considered in detail the clinical results of the transplantations of mucous membranes, muscular, nerve, and vascular tissues, tendons, aponeurosis, periosteum, peritoneum, bone, cartilage, and joints.

Dr. H. MORESTIN (Paris) began by showing that graftings and transplantations of tissues had considerably enlarged the limits of reparatory surgery. For the proof of this it sufficed to glance over the actual treatment of the principal injuries and deformities for which plastic operations were employed, to note the changes made in the results by

cutaneous, epidermic, cartilaginous, and fatty grafts. Free cutaneous grafting succeeded fairly well under determined conditions—a small fragment taken from a soft thin skin and deprived of its pannicule applied on a living surface strictly aseptic. But these indications remained very limited, especially in reparatory surgery of the face, on account of the trophic disturbances of the graft and the yellowish or whitish colouration which it preserved indefinitely. The Italian method of cutaneous transplantation at two distinct periods, notwithstanding the difficulties attendant, was the most satisfactory. But he thought that it must remain an exceptional method even for rhinoplasty and blepharoplasty, operations for which it was specially recommended. Its triumph was the reconstitution of the lobule and the septum of the nose by the skin from the palmar surface of the hand. Dermo-epidermic graftings had innumerable indications in the treatment of superficial wounds, and especially of those whose extent prevented true methods of autoplasty, such as in great loss of substance following on burns, traumatism, or removal of tumours. These grafts alone secured the healing of wounds resulting from the tearing off or complete destruction of the scalp. They were particularly recommended in cutaneous malignant disease in old people, but in lupus and deformities caused by scars they constituted a last resource. Grafting of hairy parts was attainable either by free transplantation or by means of a fragment, this last method being much more preferable. By this means the eyebrow and even the moustache might be restored. The transplantations of cartilage constituted one of the most remarkable innovations in reparatory surgery. It was thanks to this that the question of total rhinoplasty had been solved. For centuries the difficulty of establishing a framework had been the stumbling-block. This difficulty overcome, all became attainable. For, in spite of various attempts, nothing of any worth could be attained when no use could be made of the cartilaginous prothesis. From this moment truly dated the rhinoplasty worthy of the name. Cartilage showed great power of absorption, and preserved its life during an indefinite period. This unique stability and its adaptability for modelling rendered it very valuable for the construction of nasal frameworks. Besides total or subtotal rhinoplasty, and the correction of nasal malformations, other restorations might doubtless benefit by cartilaginous grafting. In incorporating fragments of cartilage with cutaneous pieces surgeons were able, for instance, under given conditions to fill up certain gaps in the jaws and in the soft parts surrounding which hitherto they had no means of doing. Adipose graftings were excellent for filling up bony hollows, for effacing the depressions of soft parts, and therefore rendered great service in the repairing of cranial gaps and facial deformities. Fatty tissue with few blood-vessels was easily transplanted, provided that it was placed in a rigorously aseptic surrounding. After a more or less short struggle it succumbed, but it was replaced progressively by tissues of new formation to which it served as a sort of protection. Thus its rôle was transitory, which did not prevent its result from being stable. Adipose grafting was a very valuable acquisition to æsthetic and reparatory surgery.

Dr. JOHN B. MURPHY (Chicago) in the course of his remarks said that for the restoration of a joint it was necessary that there should not only be non-union, but a sliding joint and functional restoration. In the reconstruction of the knee and hip it was necessary in addition that the joint should be able to support pressure. These requirements were met by reconstructing the bones on the plan of their original conformation by means of transplants and by the interposition of fascia covered by fat. He had succeeded in reconstructing an ankylosed knee by the detached fat fascia, but he had not done this in the case of the hip.

Professor A. DEPAGE communicated the results of some experiments made by his assistant, Dr. Danis, leading to the restoration of the biliary canal in dogs by means of a segment of the jugular vein.

Grafting of Blood-vessels.

Dr. E. VILLARD (Lyons) read a paper on this subject and said that there existed two large categories of vascular graftings—extemporaneous grafting and grafting of preserved vessels. Arterial graftings were distinguished from venous graftings by the nature of the graft. A grafting was auto-, homo-, or heteroplastic according as the graft was taken from the subject under treatment himself, from a subject of the same sort, or from a subject of a different sort. In extemporaneous grafting arterial autoplastic grafting healed without modification; the segment grafted acquired new life in its new surroundings with the histological structure that characterised it. Arterial homoplastic grafting gave macroscopically good results, but was not so satisfactory. Arterial heteroplastic grafting was possible, but it appeared that the graft served only as a protection to a process of reparation on the part of the animal undergoing the grafting. Venous grafting was difficult to effect. In the grafting of preserved vessels some vascular fragments might be grafted with success, due regard being had to asepsis and temperature. Surgery might benefit by the use of vascular grafting in three cases: (1) in the course of vascular traumatism; (2) in the extirpation of a tumour adherent to the large vessels; and (3) in the cure of aneurysms.

Dr. E. ULLMANN (Vienna) said that the hopes raised 15 years ago on the future of transplantations of tissues and organs had only been partially realised. Heteroplasty seemed to meet with anaphylaxis as the principal obstacle, whilst homoplasty encountered the biochemical properties of the individual. Autoplastic transplantations alone gave good results, while heteroplastic transplantations, with the exception of bony tissue, always gave bad results. The results of homoplastic transplantations were variable; given an identical quantity of sanguineous serum from the cellular protoplasm of two subjects in the same condition, homoplasty might probably give as satisfactory results as autoplasty. More research was wanted in this direction.

Dr. ALEXIS CARREL said that during the last few years it had been definitely established that autoplastic transplantations of organs were practically always successful; that homoplastic transplantations, although the immediate results might be excellent, were nearly always ultimately unsuccessful, and that heteroplastic transplantations were always unsuccessful. Although the technical part of the problem of the transplantation of organs had been completely solved long ago, this operation could not yet be applied to human surgery. Homoplastic grafts alone would be of use; but before being practicable homoplastic transplantations must be rendered as safe as autoplastic transplantations. The present aspect of the problem was to find out the causes of the reaction of an organism against a new organ and to discover by what means this reaction could be prevented and the organ made to become adapted to its new owner. Dr. Carrel described a series of experiments in this direction which had been made recently by James B. Murphy of the Rockefeller Institute, and said that a very important point had been gained by the discovery that the power of the organism to eliminate foreign tissues was due to organs such as the spleen or bone marrow and that when the function of these organs was less active a foreign substance could develop rapidly. It was not possible to foresee whether or not the present experiments of Dr. Murphy would lead directly to the practical solution of any of the problems, but it was certain that he had contributed very important work.

Conclusion of the Meeting.

The meeting, which was a scientific and social success, terminated on the afternoon of April 16th with the election of Dr. W. W. Keen, of Philadelphia, as the next president. The other officers of the society were re-elected, with the exception of the secretary for the next meeting. The election of this officer will be made later. Paris was chosen as the place of meeting in 1917.

During the meeting clinics were held at the principal hospitals. Among the entertainments and functions provided were a dinner given on April 13th by the American Surgical Association to the members of the International Society of Surgery and the ladies accompanying them. On April 14th a luncheon was given to the ladies by Mrs. W. J. Mayo at the Hotel Biltmore. On the same day a matinée performance of *Peter Pan* was given for

the ladies, and in the evening a special performance was given at the Metropolitan Opera House, at the instance of the American Surgical Association, to all the members and the ladies accompanying them. On April 15th the President's reception was held.

Dr. Mayer, in the course of reading the general secretary's report, pointed out that 114 new members proposed by the National Committees had been elected by the International Committee—namely, six Germans, one Austrian, one Belgian, two Canadians, 74 Americans, 14 Danish, one English, two Italians, one Norwegian, four Dutch, one Roumanian, four Russians, one Swiss, and two Hungarian candidates.

A very excellent and full display of surgical instruments was given in rooms near the hall in which the meetings were held. A feature of the exhibition was supplied by Messrs. Allen and Hanburys (London), who sent specimens of the instruments designed and used by Sir Arbuthnot Lane in his fracture-plating operations.

To the courtesy, tact, and ability of the two secretaries, Professor L. Mayer, of Brussels, and Dr. J. P. Hoguet, of New York, the smoothness of all the arrangements was mainly due, and your representative wishes to express his personal thanks to both of these gentlemen for their ready and valuable help.

Home and Foreign Notes.

(FROM OUR OWN CORRESPONDENTS.)

SCOTLAND.

Annual Report of Medical Officer to the Scottish Education Department.

Dr. Lewis D. Cruickshank, in his report for the year ending July 31st, 1913, emphasises the fact that medical treatment of school children is inefficient, though the organisation for medical inspection is satisfactory. The reports of the medical inspectors show that there is a great amount of malnutrition among Scottish children. These reports make it clear that the malnutrition is in most cases the result not of deliberate neglect, but of ignorance of the parents as to the nature and amount of foodstuffs most suitable for children, and the importance of adequate sleep and fresh air. Therefore, the more nearly medical inspection touches the home the greater will be the measure of success. The medical officer for the mainland division of Inverness reports that the substitution of tea and bread for porridge and milk has not appreciably invaded his district, to which he attributes the comparative absence of malnutrition among the school children, but the medical officer for Sutherland finds a considerable percentage of cases of malnutrition which he attributes to the tea and bread habit. A careful study of the figures makes it clear that there must be a considerable difference in the standards adopted by the various inspectors. In Aberdeen the number that suffered from "poor nutrition" was 19·4 per cent.; in the Glasgow board schools "bad nutrition" amounted to 4·13 per cent., and in Govan to 1·5 per cent. In Greenock the cases returned as "below average" amounted to 21 per cent. In the counties the differences are even more marked. A great improvement is reported in the conditions of personal cleanliness, though some larger school boards systematically neglect their legal powers in regard to the parents of verminous children. There would appear to be about 10 per cent. of school children suffering from defects of sight requiring treatment. The problem of conservation of sight is therefore a very pressing one. The majority of medical officers are emphatic that dental treatment is one of the most pressing problems. The medical officer for the Govan board states that out of 10,915 children examined, at least 9676 had one or more teeth requiring attention. About 1489 new cases of tuberculosis were discovered during the year under review. Approximately 576 were cases of pulmonary disease, 204 diseases of bones and joints, 333 of gland disease, and 376 unclassified. There are in all 41 separate schemes of medical inspection in Scotland. Of these, 30 are schemes prepared and administered by the County Secondary Education Committees, and 11 are schemes administered by burgh school boards. The number of school medical officers is 110, and the total number of whole-time nurses employed is 52. The total number of children examined during the year was 350,831, out of a total average number of scholars of 809,995.

Kincardineshire Medical Officer's Annual Report.

The death-rate of children under 1 year, as stated in the twenty-third annual report of the medical officer of Kincardineshire, is 102 for every 1000 children. Last year the death-rate was 77 per 1000. For 1913 the zymotic death-rate was 1·061 per 1000. Deaths from all tuberculous diseases caused 7 per cent. of the total deaths. Deaths from malignant disease were 19, equal to a death-rate of 0·916 per 1000. In 1912 there were 23 deaths, equal to 1·1 per 1000. It is noted in the report that, as in former years, almost half the cases of consumption were notified from the St. Cyrus district, and that two out of every three deaths from consumption took place within that district.

Aberdeenshire Panel Practitioners.

A meeting of Aberdeenshire panel practitioners was held on May 15th, when the question of the 20 per cent. deduction from the quarterly cheques of the practitioners, and the position of chemists with regard to the drug fund, were discussed. The meeting was very largely attended. The question of Postcard 547, issued by the Insurance Commissioners, first came up, and it was unanimously agreed that no notice be taken of the postcards, as they were calculated to create strife between the chemists and the panel practitioners. In the course of the discussion it was pointed out that the wording of the postcards was so ambiguous that it was impossible for an answer to be given definite enough to be of any value. The drug fund was discussed and the opinion of the meeting was that the fund for Scotland should be pooled, and that an auditor paid by the Insurance Committee should be appointed to check the chemists' accounts. It was resolved, with regard to Circular 545, to express no opinion upon the purely commercial matter of drug prices; but the meeting found that there was no reason to doubt the statements made by the chemists with regard to the alleged inadequate remuneration which they were receiving for dispensing where skilled compounding was required, and the meeting expressed its sympathy with them in their demand for better terms. With regard to the 20 per cent. reduction from the practitioners' cheques, it was decided that legal opinion be taken as to the legality of the procedure. It was also resolved that the County Panel

Committee should combine with the Burgh Panel Committee in any action taken to protect practitioners' interests, and that meantime the facts of the case be laid before the Scottish Committee of the British Medical Association to secure an immediate protest being made to the Commissioners. The meeting further resolved that, as the present unsatisfactory state of affairs was largely due to the carelessness and inefficiency of Approved Societies over index slips, the Commissioners be requested to take immediate steps to deal with the societies concerned.

May 19th.

IRELAND.

The Public and the National Insurance Act.

THERE are signs that public hostility toward the working of the sickness benefit of the National Insurance Act is gradually growing. Members of Approved Societies are beginning to learn that their only hope of obtaining fair treatment is by reliance being placed on the certificates of their own medical attendants. From all parts of the country the complaint comes that benefit is refused to members unfit to work by reason of sickness. Most of these people present certificates of incapacity signed by their own medical attendants, but these are cast aside in favour of the opinion of the "medical adviser." In many cases the sick member, on refusal of benefit, has to seek help from the rates, either in the form of out-door relief or of treatment in the workhouse infirmary. The County Westmeath board of the Ancient Order of Hibernians—the largest Approved Society in Ireland—by a unanimous resolution last week called attention to the grave injustice suffered by insured members under the present system of certification by "medical advisers."

The Local Government Board and the Insurance Commissioners.

One of the drawbacks of Irish administration is that where the activities of various Government departments overlap there seems to be little attempt at harmonious action. In matters affecting the public health we have had unfortunate overlapping between the Local Government Board and the Department of Agriculture. Only a few years ago the manager of a model farm of the department was prosecuted because the sanitary condition of the farm-yard did not satisfy the regulations approved by the Local Government Board. Since the passing of the National Insurance Act there has been the additional confusion caused by the overlapping between the functions of the Insurance Commissioners and those of the Local Government Board. No attempt seems to have been made to arrive at any agreement between these two bodies on points of public policy. Both are concerned in advising and controlling the tuberculosis campaign, and it not infrequently happens that the Local Government Board gives one kind of advice and the Insurance Commissioners the opposite.

The late Dr. Henry O'Neill, J.P.

The city of Belfast, the medical profession, and the cause of public health are all the poorer by the death of Dr. H. O'Neill in his 61st year, which occurred at his country residence near Belfast on May 16th, after an illness that began as pneumonia on last Christmas Eve. From this attack he recovered, so that for a time he resumed work, but a few months ago he was obliged to take to his bed with cardiac complications, and was never out again. Dr. O'Neill, who claimed to be a lineal descendant of the great Hugh O'Neill of Dungannon, was born at Crossnacreevy, co. Down. In 1868, while still young, he entered the establishment of a well-known firm of chemists in Belfast, but his ambition was to become a doctor, and he studied at Queen's College, Belfast, and in 1877 graduated M.D. and M.Ch. of the Royal University of Ireland, obtaining the M.A.O. in 1900. In the year 1877 he became a house surgeon at the old Belfast Royal Hospital. Two years later he became assistant surgeon, in 1882 full surgeon, in 1884 pathologist, and in 1900, when he retired, consulting surgeon to the Belfast Royal Hospital (now the Royal Victoria Hospital). Beginning practice in 1879 in Belfast he rose rapidly, and for many years had an immense working class *clientèle*, his consulting rooms in the afternoon and evening being crowded. Turning his attention to public health, he established the *Belfast Health Journal*, and on this platform he entered the city corporation, where he spent over 20 years of public life, at the time of his death being chairman of the market committee. In 1905 he was High Sheriff of the city. Dr. O'Neill was also a barrister-at-law of both the Irish and English bars. He was curator of the Museum of Sanitary Science at Queen's College, Belfast, and an ex-president of the Ulster Medical Society and of the North of Ireland Branch of the British Medical Association. The health schemes, for which he will always be remembered, will be the inspection of meat, the building of the new Belfast city abattoir at a cost of £52,000, as well as the alterations and improvements which he had carried out at the Belfast city court-house, by which the scandalous sanitary condition of that place was put right and proper accommodation was provided for the Bar, jurors, litigants, and witnesses. Dr. O'Neill was a many-sided man whose memory will long be cherished in Belfast for his health reforms, his private benevolences, his medical skill and his cheery optimism; but to his patients he will always be remembered as one of the kindliest of men.

Derry Water-supply.

The Irish Local Government Board have suddenly reversed their previous decision,[1] and have now written that they have decided, with some misgivings, to grant a provisional order sanctioning an auxiliary water-supply to Derry. This complete change of front on the part of the Local Government Board has been due to the growing volume of protest raised by their previous action, and especially to a resolution passed unanimously by the Derry Chamber of Commerce requesting them to reconsider their decision, and pointing out that any shortage in the water-supply would be disastrous to the trade of the city. The Chamber of Commerce at the same time urged upon the corporation "the necessity of proceeding without avoidable delay with a larger scheme for a full and satisfactory water-supply." It is a great pity that the Local Government Board did not more thoroughly take every aspect of the question into consideration before committing themselves so definitely to a decision which is no sooner given than it is reversed.

May 19th.

[1] THE LANCET, May 16th, 1914, p. 1422.

PARIS.

Antityphoid Vaccination of Hospital Staffs.

Two years ago the Assistance Publique of Paris decided that all male and female nurses and attendants of the Paris hospitals must undergo antityphoid vaccination with either the Chantemesse or the Vincent vaccine now in use in France. This measure was especially necessary since the personnel, including medical students employed in the hospitals, had yearly furnished some deaths from typhoid contracted while caring for typhoid patients. Up to the present this regulation has worked without friction, but last week the hospital employees held a meeting at which they refused henceforth to submit to such vaccinations. They alleged that two nurses had died, one at the Beaujon, the other at the Necker, after it; that many more had been rendered seriously ill; and finally that one, having been wounded by broken glass during the incubation period of the vaccination, had sustained such serious accidents that it would be necessary to amputate her arm. The syndicate of nurses contended that under these circumstances it would be better to suspend the inoculations, as had already been done in the army, for two months. This event has caused considerable public excitement. M. Chantemesse and M. Vincent have asserted that their respective vaccines, which have now been used in hundreds of thousands of cases without any accident, could not be held responsible. It is true that the Vincent vaccine, prepared by ether sterilisation of cultures, necessitates four injections at eight days' intervals, and that during this period, which is characterised by a negative phase, the subject is in a state of great receptivity. It must be added also that after the inoculation the subject should be allowed to remain strictly at rest, and should avoid overfeeding, which can hardly be fully carried out with the personnel, male and female, of the hospitals, devoted as they are to their work and regardless of danger. The director of the Assistance Publique has replied to the allegations by stating that 1055 inoculations had been made up to date without any accident occurring, and that only 40 employees had broken the series of four injections considered necessary for immunisation. It was in these circumstances that one of the nurses succumbed. The other had not been submitted to preventive vaccination, but having contracted typhoid had been treated during the course of the disease with vaccine,, but without success, as is frequently the case. As to the nurse who was wounded in the arm, the arm had not been amputated, but there had been a phlegmon consecutive to a wound, but entirely without relation to the antityphoid inoculation, which had been all over several days before. The director added that the vaccination is not enforced in the case of those already employed, but only with the newly appointed. At a later meeting the syndicate of hospital employees passed a resolution disclaiming any hostility to the vaccination, but demanding that precautions should be taken henceforth to ensure that the necessary rest is taken after the vaccination, and especially that a selection of cases is made before vaccinating, because it was alleged that very many were in a state of bad health, and a third of them were tuberculous. The important question is thus arising as to the right of the executive of any administrative body to impose vaccination of any kind upon its personnel Particularly since the new Workmen's Compensation Act, which imposes fresh pecuniary liabilities on employers, it is to their interest to accept only those who by vaccination present the smallest chance of developing occupational diseases. Amongst the excavators on the Metro to-day antitetanic vaccination is required, but no law demands it, and it might very well happen that a workman should bring an action against his employers for having imposed it. It will be interesting to know what the law will have to say on this novel question.

The Feeding of Infants.

According to the views expressed by M. Wallich and M. Denesse in a paper at the Société de Médecine Publique et de Génie Sanitaire as to the causes that compel poor mothers to desist from suckling their children, 70 per cent. are driven thereto by the necessity of continuing their work to obtain means of subsistence. Of the children thus put out to nurse the mortality is 50 per cent., and this produces one of the most serious causes of the depopulation of the great towns. Although masked by the continual immigration, this depopulation becomes evident each year that the census is taken. Undertakings have, however, been established in large numbers, both by the authorities and by private initiative, to remedy this state of things. In many factories crèches have been established where mothers can leave their children while they are at work. But such are as yet too few in number, and apply only to the women workers in factories and not to women clerks, shop assistants, and the like. The Assistance aux Mères Nourrices, by furnishing them with work that can be done at home, is of service under limited conditions, but it only results in a miserable wage. The society was driven to the conclusion that in this matter lay one of the most serious social problems of the day. An inquiry has been recently undertaken by Dr. Variot into the matter. It showed that bottle-feeding was giving, in regard to the development of the infant in weight and health, results almost equal at the end of a year to those obtained by breast-feeding; but it was mixed feeding—that is to say, partly the mother's breast and partly the bottle—which in the working class gave far the best results, doubtless because of the inferior quality of the mother's milk in these cases.

May 18th.

UNITED STATES OF AMERICA.

Annual Convention of the American Surgical Association.

THE annual meeting of the American Surgical Association was held at the Hotel Astor, New York, from April 9th to 12th. The attendance was large, among those present being 40 or more surgeons from Europe who had come for the meeting of the International Surgical Association, whose meetings have been reported in THE LANCET of May 2nd (p. 1269) and subsequently. A feature of the meeting was the papers and discussion on cancer and its treatment. Dr. W. J. Mayo, of Rochester, Minn., made cancer the subject for his presidential address, and among other points emphasised the fact that the radiologist had been able in 100 consecutive cases of cancer of the stomach to make a definite diagnosis in 87 per cent. The best that had been accomplished by other means was 67 per cent. Dr. Mayo was of the opinion that this method of diagnosing malignant disease of the stomach was

entitled to the first place, and he would be inclined to place it second in value in diagnosing obstructions of the duodenum. He thought that food was to blame for the prevalence of precancerous conditions in the gastric regions among civilised peoples. The quantity eaten in civilised communities brought about chronic gastric irritation which in some instances resulted in cancer.

Radium in the Treatment of Malignant Growths.

Dr. Richard Sparmann, of Vienna, a member of the clinic of Dr. Anton von Eiselsberg, read a paper on the treatment of malignant growths by means of radium. Dr. Sparmann said that 42 cases of malignant tumour had been treated by radium at the Eiselsberg clinic; of this number 17 had died, 5 from causes other than tumours; 6 had been benefited; 5 cases had shown no effects; while 14 cases had been positively aggravated. According to Dr. Sparmann the experiments in Vienna had demonstrated the fact that radium was effective only in superficial cases of malignant tumour, and even then was effective in no marked degree. Radium had actually made worse many bad tumours by destroying healthy tissue around them, so that there was nothing left to check the spread of the tumour. There had been no specific change in tissue effected by the use of radium, and it did not appear that it would ever replace operation in the treatment of cancer. The hopes that had been placed in radium had not been realised. Dr. Robert Abbe, of New York, said that in his experience radium had exerted marked beneficial action on certain forms of malignant growths, and while he would say nothing about radium curing cancer, it did, he thought, act specifically and from this point of view it should be studied. The majority of the audience, however, appeared to agree with the conclusions of Dr. Sparmann. The statement made by Dr. Mayo that early diagnosis and prompt surgical treatment were the sole effective measures at present known for cancer met with the approval of most of those present.

Clinics at the Polyclinic Hospital and Medical School, New York.

During the week in which the International Society of Surgery met in New York a series of clinics and lectures were held at the Polyclinic Hospital and Medical School. The first of these was on April 14th on internal photography as an aid to diagnosis, by Dr. Alfred C. Jordan, of London. On April 15th Dr. Eugene Hertoghe, of Antwerp, gave a lecture and demonstration on hypothyroidism. On April 16th Dr. Benjamin Merrill Rickette, of Cincinnati, Ohio, gave a lecture and demonstration on the surgery of the heart and lungs. On April 17th Dr. John Wyeth discussed the treatment of burns, Dr. John A. Bodine operated for the radical cure of hernia, Dr. Alexander Lyle demonstrated the treatment of fractures, and Dr. William Seaman Bainbridge, professor of surgery at the Polyclinic Hospital, discussed cancer and its treatment, and exhibited patients on whom he had operated for this disease.

Complimentary Dinner.

On the evening of April 13th Dr. William Seaman Bainbridge gave a dinner at the Hotel Biltmore, New York, in honour of Dr. Eugene Hertoghe, of Antwerp, Dr. Alfred C. Jordan, of London, Dr. Benjamin Merrill Rickette, of Cincinnati, and other representatives of the European and American medical profession. About 190 medical men were present.

New York University and Bellevue Hospital Medical School.

Dr. William Hallock Park, professor of bacteriology and hygiene in the New York University and Bellevue Hospital Medical College, has been elected dean of the college in the place of Dr. Egbert Le Fevre, who died recently.

The New Professor of Medicine at Johns Hopkins University.

Dr. Theodore C. Janeway, Bard professor of medicine at Columbia University and director of the medical department of the Presbyterian Hospital, New York, has accepted the chair of Medicine at the Johns Hopkins University, Baltimore, in succession to Dr. Lewellys F. Barker. Under the new scheme adopted recently at the University, professors will devote their whole time to teaching, the professors of surgery, Dr. W. S. Halstead, and pædiatrics, Dr. John Howland, having accepted the new conditions.

Cross of the Legion of Honour for Dr. Flexner.

The President of the French Republic has conferred the Cross of the Chevalier of the Legion of Honour on Dr. Simon Flexner, of the Rockefeller Institute.

Gold Medals for Surgeon-General Gorgas.

On April 22nd the National Academy of Sciences presented at Washington to Surgeon-General Gorgas its gold medal "for eminence in the application of science to the public welfare," and on April 27th the American Museum of Safety presented to him in New York its Dr. Louis Livingston Seaman medal. Both these awards were in recognition of his great achievements in the Canal Zone, Panama.

May 12th.

SOUTH AFRICA.

Proposed Registration and Medical Inspection of Domestic Servants and Children's Nurses.

IN connexion with an Ordinance before the Provincial Council to amend the general municipal law of the Cape Province the Administrator tabled a remarkable amendment. Under the existing law the council of a municipality may make regulations, *inter alia*, "for preventing the possible spread of infectious, contagious, or loathsome diseases by the carrying on of any trade, business, or occupation." The amendment provided that the following words should be added to the section—namely, "and providing for the registration and medical inspection of domestic servants and children's nurses in any area where the Administrator is of the opinion that such registration is necessary in order to prevent the spread of any contagious or loathsome disease." The proposal caused some outcry to be raised in Cape Town, but it was felt generally that very serious facts must have been brought to the notice of Sir Frederic de Waal to cause him to bring forward the proposal, and such proved to be the case when the Administrator dealt with the amendment in the Provincial Council. He stated that during the year he had made a long tour through Bechuanaland and Griqualand West, and that in the course of this tour the prevalence of syphilis was brought very forcibly to his notice not only by local authorities but by district surgeons, medical practitioners, and others. He was informed that the disease was very rife indeed amongst natives, and that it was spreading to the European section of the community. He

stated that the disease differed considerably from syphilis as met with in other countries, and more particularly in its method of spread. While much of the disease was of hereditary origin, in acquired cases it seemed to be spread commensally and mainly by other means than by sexual intercourse. Apart from its method of spread and the absence of the earlier symptoms associated with syphilis, the disease resembled syphilis in every other respect, and the general opinion amongst medical men in the area was that the disease was syphilis modified by racial and climatic conditions. Sir Frederic de Waal then quoted from the annual reports of Dr. A. J. Gregory, the late medical officer of health, showing that from 1903 onwards up to the date of Union the medical officer drew repeated attention to this serious problem, and that these reports contained details of numbers of cases in which European children had been infected by native servants. He then quoted evidence issued since Union showing that the number of European families reported as having become infected in this manner was increasing. The disease in its earlier stages is usually mild but extremely contagious, and many of these people are infected without being aware of it. He finally stated that he had deliberately placed the motion on the order paper to direct attention to and to cause a discussion on a very grave state of affairs with a view of rousing and educating public opinion on a national danger. After an able and instructive speech the Administrator formally proposed the motion, indicating that after it had been discussed he intended to ask leave to withdraw it in order that he might consult the Medical Congress which is meeting in Kimberley in June next. From the debate which ensued there is little doubt but that the Administrator convinced the House, and that the motion would have been carried had he not withdrawn it. Indeed, he was only allowed to do so on the understanding that legislation would be introduced next year after the Medical Congress had been consulted.

Legislation for Infectious Diseases.

The Public Health Acts of the Cape Province are defective in several respects. Amongst other defects they do not provide local authorities with sufficient powers to remove patients suffering from infectious diseases to hospitals set apart for that purpose. Thus a person suffering from a proclaimed infectious disease can only be removed compulsorily if he is without proper accommodation, or is lodged in a room occupied by more than one family, or is on board a vessel, or is not under medical treatment, or is found homeless in a public place. The Cape Provincial Council has now empowered municipal councils to frame regulations "providing for the compulsory removal to and detention in hospital of persons suffering or believed by the health officer to be suffering from an infectious disease of any nature, provided that, except in the case of plague, cholera, or small-pox, no such regulations shall authorise such removal or detention if the medical practitioner, if any, in attendance shall notify the health officer that in his opinion there is no necessity for such removal or detention." This is a distinct advance on the existing law, but it would have been preferable perhaps if the section had been restricted to deal with diseases proclaimed as infectious or contagious diseases under the Health Acts and if the proviso had been omitted.

The Bloemfontein Hospital.

The old board of the National Hospital, Bloemfontein, ceased to exist on March 31st last, and up to the end of April the new board had not been constituted according to the terms of the Hospitals and Charitable Institutions Ordinance of the Province. The resident medical officer, matron, and secretary severed their connexion with the hospital on March 31st, but on representations being made by the outgoing board the two former consented to remain until May 31st, so as to enable the new board to advertise the posts early in April, when it should have come into being. The fault lies apparently in the administration department, and throughout April there has been no constituted authority in charge of the hospital, no official responsible for its financial administration, and no steps taken to fill the vacancies.

April 30th.

INDIA.

Health Officer of Karachi.

AT present the posts of health officer of the port of Karachi and chemical analyst of Sind are held by one officer. Owing to the altered conditions and growing importance of the port of Karachi the present arrangement is found to be inconvenient, and it is therefore proposed to separate the two appointments.

A Surgeon-General for Bengal.

The question of converting the post of Inspector-General of Civil Hospitals in Bengal into a surgeoncy has been under consideration for some time, and a despatch on the subject has been sent home for the approval of the Secretary of State.

Tuberculosis Institute for Madras.

The Government of Madras have sanctioned a provincial contribution of Rs.2,18,527 in aid of the King Edward Memorial Fund for the establishment and maintenance of a tuberculosis institute in the presidency town, and invited the views of the memorial committee in regard to the location, construction, and management of the institute.

Colonel Henry Smith, I.M.S.

The War Department of the United States has recently asked Colonel Henry Smith, civil surgeon at Amritsar, for a signed photograph of himself. This they desire to add to their gallery of distinguished modern medical celebrities in the Army Medical Museum and Library at Washington.

Antimalarial Campaign in Southern India.

Dr. Milton, the officer in charge of the Southern India Planters' Association, has elaborated a comprehensive antimalarial scheme, the particulars of which are now before the Madras Government.

Bombay Medical Union.

The annual report of the Bombay Medical Union gives a record of excellent progress, and there are now over 180 members on the roll. Papers on numerous important subjects, including malaria prevention, have been read by distinguished members of the union. In reply to a letter from the Government of India with regard to bogus degrees and diplomas, an important resolution was passed to the effect that "the union approves of the proposed legislation by the Government of India regarding the use of bogus medical degrees, and respectfully begs to suggest that any institution granting titles, degrees, diplomas, or licences entitling to practise medicine under the guise of some system of medicine or other, but practically imparting only a crude and imperfect imitation of the Western system of medical science should

also be brought within the purview of the proposed legislation." Other resolutions included the decision to draw up a representation concerning the medical services and submit this to the Royal Commission on Public Services in India. The finances of the union show a satisfactory balance in hand.

Plague in the Punjab.

Though the plague epidemic in the Punjab is not reaching the proportions of a bad year it is decidedly severe in one or two districts. There is, for instance, a sharp outbreak in the Hafizabad tahsil of the Gujranwala district. As Gujranwala is a district that has been infected pretty steadily since the early days of plague, the outbreak there this year does not seem to point to any large degree of immunity having been reached by the people. Experiments are being made by the plague staff in the Punjab in rat destruction by means of slow-burning squibs containing potassium nitrate and sulphur. The squib is wrapped in paper soaked in mustard oil. The experiments have so far given promising results, for the fumes have been proved to kill rat-fleas coming in contact with them in less than 30 seconds. As the rat-run is the breeding-place of the rat-flea—where it leaves its eggs and the larvæ are hatched out—it is hoped that the flea-population may be very greatly reduced, provided these experiments can be reproduced with similar results on a wholesale scale. The weak point about all smoking processes is that they are ineffective against rats lodged in rafters in the roofs of houses. So far it has been found impossible to discover a method of dislodging such rats.

The Strike at the Lahore Medical College.

The original cause of the strike of Lahore Medical College students was the alleged proceedings of a meeting of students connected with the London Hospital, and the refusal of Lieutenant-Colonel Sutherland to preside at the meeting of protest which the students in Lahore proposed to hold. The report was published in a Punjab newspaper. When Colonel Sutherland's attention was called to the matter he pointed out that there was nothing to show that the report was accurate, and he told the students' representatives that he would write to the dean of the hospital and ask for an authorised version of the proceedings. The students were, however, too indignant to wait; they held their meeting and decided to strike forthwith. The reply to Colonel Sutherland's letter has now been received, and is published as a press *communique* by the Punjab Government. The dean's letter completely justifies Colonel Sutherland's caution and his advice to the students. The original account of the meeting was garbled to such an extent that it can only be described as a malicious misrepresentation of perfectly innocent facts. The persons alleged to have proposed, seconded, and supported the resolution were not even present; the resolution actually passed bore no resemblance whatever to the resolution quoted by the correspondent of the Punjab newspaper. The statement that a resolution was passed by 462 votes to 21 condemning the admission of Asiatics to the London Hospital and the English medical profession was totally false. No such resolution was passed, and the only resolution proposed was accepted on a show of hands in a meeting at which about 150 persons were present. The dean further reports that Mr. Mallet, of the India Office, who was present, spoke warmly on behalf of Indian students, and that in general a distinction was frequently drawn between Indian and Egyptian students to the advantage of the former. The dean added a personal testimony to the general good conduct of Indian students and to the sympathy that is felt for them. Whatever may be the outcome of the inquiry about to be held into alleged grievances, it is now demonstrated that the strike in its origin was unjustified by any substantial cause.

April 23rd.

Correspondence.

"Audi alteram partem."

THE PLEA FOR IMMEDIATE OPERATION IN APPENDICITIS.

To the Editor of THE LANCET.

SIR,—There is one point in connexion with the question of immediate operation in cases of acute appendicitis raised by Mr. Battle and yourself in the issue of THE LANCET for May 16th which does not appear to me to have received the attention that it deserves. No clear distinction is drawn between "immediate" and "early," nor between the onset of the attack and the onset of the acute symptoms. An operation is spoken of as "early" because only a few hours have passed since the outbreak of the symptoms that caused alarm, while as a matter of fact the attack has perhaps been going on for two or three days. Acute symptoms, instead of marking the beginning of the disease, in only too many instances mean that the disease has suddenly changed its character and become acute.

I have operated within eight hours of the onset of the acute symptoms and found the whole of the appendix gangrenous. It was difficult to believe that such a change could have taken place within that time. More careful inquiry elicited the fact that there had been discomfort with a feeling of nausea for 48 hours before, only the patient thought nothing of it and went into the city as usual. The operation was really performed upon the third day, not upon the first. It was immediate, but not early. No one watching a mild case of appendicitis would hesitate about immediate operation if the symptoms suddenly became acute. The rule should be the same when the attack apparently begins with acute symptoms. Nearly always it will be found on inquiry in these cases that there has been "biliousness" or "stomach-ache" or a feeling of nausea for two or three days before. The patient will say nothing about it unless he is asked directly. Previous attacks of a similar character have often occurred before and have passed off. But on this occasion the attack means that the appendix is involved, and the beginning of the inflammation must be dated, not from the time the symptoms suddenly changed their character and became acute, but from the time when they first appeared. Immediate operation is as necessary in the one case as in the other, for the conditions are the same. But the operation cannot be called "early."

I am, Sir, yours faithfully,

C. MANSELL MOULLIN.

Wimpole-street, W., May 17th, 1914.

ANKYLOSTOMIASIS.

To the Editor of THE LANCET.

SIR,—I am directed to inform you that the enclosed dispatch from H.M. Consul at San Juan, Porto Rico, has been sent by the Lord President of the Privy Council to the President of the General Medical Council for the information of the medical men in this country, and that it was accompanied by a pamphlet on Uncinariasis or Hookworm Disease, a copy of which is in the possession of the Medical Council.

I am, Sir, yours faithfully,

NORMAN C. KING,
Registrar.

Oxford-street, W., May 15th, 1914.

H.B.M. Consulate, San Juan, Porto Rico,
February 14th, 1914.

SIR,—In view of the increasing attention which is being given to the disease known as "uncinariasis" or hookworm disease, more commonly known as "anæmia," and which has been made a special study on this island, I have procured from Dr. C. R. Gill two copies of a technical record of 316 cases cured by him at Porto Rico during the period from April to September, 1912, which I have the honour to transmit, enclosed herewith, and trust may prove of interest to the British medical faculty.

The importance attached by the U.S.A. authorities to this branch of medical research is clearly demonstrated by the fact that during the fiscal year ended June 30th, 1912, no less than 43 stations were established for the treatment of sufferers from the disease in question. Of the 20,861 patients attended by the staff of the Bureau of Transmissible Diseases 24 per cent. were cured, leaving 61 per cent. under treatment. It has to be mentioned, however, that 13 per cent. who presented themselves at stations for treatment, and are included in the aggregate of attendance, failed to return.

Dr. C. R. Gill, who lectured before the Royal College of Surgeons, at the Liverpool School of Tropical Diseases, and to other medical corporations in England on his return from U.S.A. army medical work in the Philippine Islands, has very kindly expressed to me his willingness to answer any queries addressed to him by his British medical colleagues arising from matter treated in the pamphlet sent herewith.

I have the honour, &c.,

(Signed) G. AMBROSE POGSON,
H.B.M. Consul.

The Right Hon. Sir Edward Grey, K.G., &c.,
H.M. Secretary of State for Foreign
Affairs, Foreign Office, S.W.

THE MEDICAL INSURANCE AGENCY.

To the Editor of THE LANCET.

SIR,—I am glad to see Dr. G. E. Haslip's letter in THE LANCET of May 16th, and as a member of the committee of the Medical Insurance Agency I should like to say that I fully endorse everything it contains. There are two forms of insurance which should, I think, receive the early and earnest consideration of every member of the profession. The first of these is simple life assurance, which should be effected as soon as possible after qualifying, thus obviating the risk of having to pay a higher premium in later years owing to impaired health or other causes. The second is endowment insurance, which is particularly applicable when the education of children has to be provided for out of professional savings.

First, let me say a word as to simple life assurance. The assertion is often made that there is no need for a bachelor to insure his life, but it seems to me that the sooner this fallacy is dispelled the better. In the first place, the regular payment even of a small annual premium encourages thrift. Secondly, the views held by most people as to the advantages and disadvantages of matrimony are notoriously liable to modification as time passes. And thirdly, even if the idea of marriage be finally abandoned the life assurance which has been effected will always be a valuable asset, seeing that the surrender value of the policy may at any time be realised, either to meet an unexpected financial strain or to purchase an annuity on retirement from practice. The second form of insurance is one which it is generally advisable to effect as soon as the returns from practice are sufficient. It should ever be borne in mind by the practitioner with a young family that the high-water mark in educational expenditure often coincides with the low-water mark of practice. Failing health, advancing years, inexorable competition—these are the contingencies that a careful man should do his utmost to insure against. I know of nothing more distressing than for a man who has had, and still has, modest ambitions for his children suddenly to find himself in middle age unable to carry out his plans, and perhaps his promises. However pressed a young married man may be, it is certainly his duty carefully to consider the best and most economical way of insuring his life.

As Dr. Haslip has stated, all medical men who insure through the Medical Insurance Agency are able to effect a material saving in commissions, whether the insurance relate to life, accident, fire, burglary, motor-car, or employer's liability. But there is an additional inducement which I feel sure will appeal to all your readers. It is that the medical man who thus insures not only benefits himself but many charities closely connected with his own profession. As Dr. Haslip has stated, our committee is able (thanks to the support the agency has already received, and to the energy of our agent and secretary) to disburse from our profits considerable sums each year to such charities.

I am, Sir, yours faithfully,

FREDERIC HEWITT.

Queen Anne-street, W., May 18th, 1914.

DIATHERMY IN VESICAL HÆMORRHAGE.

To the Editor of THE LANCET.

SIR,—I was interested to read the letter of Dr. C. E. Iredell and Mr. Ralph Thompson on this subject in your last issue, for it surprised me a little to find that Mr. R. H. Jocelyn Swan made no reference to diathermy in his paper on Tumours of the Bladder.

The application of diathermy through the cystoscope to villous tumours of the bladder was devised by Beer, of New York, two years ago, and has since been used with uniform success in some hundreds of cases. I have been employing it for a long time, and published what I believe to be the first English paper on the subject in the *Clinical Journal* of April 15th, 1914. The results are so satisfactory that I do not believe the bladder need ever be opened in the future for simple tumours of the bladder. I find that three or four treatments are usually quite sufficient to destroy a papilloma completely. No anæsthetic is required and the patient need not remain away from work for more than a day for each treatment.

I think it most important that knowledge of this treatment should become widely disseminated amongst the medical profession. Personally I hope never to open a bladder again for simple villous tumours, as I am convinced that such tumours can all be cured by diathermy applied under the guidance of the cystoscope.

I am, Sir, yours faithfully,

FRANK KIDD.

Harley-street, W., May 18th, 1914.

MASSIVE COLLAPSE OF THE LUNGS.

To the Editor of THE LANCET.

SIR,—The interesting paper of Dr. T. R. Elliott and Dr. L. A. Dingley in THE LANCET of May 9th on post-operative massive collapse of the lungs was only this week brought to my notice. I have been working for some time on this interesting subject, experimentally and by making clinical observation, and as my conclusions do not agree with those of the authors I venture to write this letter.

Massive collapse of the lung is by no means limited to those who have undergone operations, but symptoms such as those described in the paper are generally only found in patients who have had an anæsthetic. It is well known to infirmary medical officers that the lower lobes of the lung are, on post-mortem examination, found more or less completely collapsed in patients who have been bedridden for some time and without any symptoms of such lesions being present during life. I have two specimens taken from patients who were completely paraplegic, from lesions in the upper dorsal region of the spinal cord, showing complete collapse of the lower lobes, thus indicating that the condition occurs when the diaphragm is the sole muscle of respiration. Further, many patients who have been lying supine—e.g., under treatment for fracture of the femur or other conditions—exhibit the physical signs of massive collapse of the lower lobes. In all the cases I have investigated there has been loss of tone of the abdominal muscles on the side affected or on both sides when both the lower lobes are collapsed. When one side only is affected, that side will be found by measurement to be larger than normal—a point which is against the theory of spasm of muscles. I do not propose to enter upon a discussion as to the part played by the abdominal muscles in respiration, but I am led to the conclusion that massive collapse of the lower lobes is a natural sequence of prolonged quiet breathing in the supine position in such people as do not then use the abdominal muscles to fix their chests. The mechanism of this collapse is evidently closely connected with that of the production of œdema of the lungs, the distribution of the two conditions corresponding fairly closely. Sometimes after laparotomy the action of certain of the abdominal muscles is completely inhibited and collapse may follow even though the patient is not in the supine position. To some extent the form of the chest plays an important rôle. The greater the comparative transverse diameter of the chest at its lower part, the greater is the liability to collapse. It is easy to demonstrate that marked differences in the measurements of the chest and position of the diaphragm occur when changing from the upright to the supine position. By means of X ray examination it can be demonstrated that in quiet breathing the movement of the diaphragm may be so slight as to be practically negligible, and this fact must be taken into account when concluding that there is no movement of the muscle in pathological conditions.

The results of the experiments recorded are in agreement with my own, but it must be remembered that the chest of an animal, such as the rabbit, is very different from that of the average man. My experiments show that section of one phrenic nerve produces but little effect, but that effect is distributed over both lungs. I agree also with the treatment suggested, which is very similar to that which I laid down in an article on this subject in the "Practitioner's Encyclopedia of Medicine and Surgery," second edition.

I am, Sir, yours faithfully,

J. CHARLTON BRISCOE.

Harley-street, W., May 19th, 1914.

SOUTH AFRICAN CIVIL SURGEONS' DINNER.

To the Editor of THE LANCET.

SIR,—The above dinner (now held triennially) will take place on Wednesday, July 8th, at the Criterion Restaurant, at 7.45 P.M. Dr. Howard Tooth will take the chair. Tickets, price 10s. 6*d*., should be paid for at the dinner.

It is hoped that those who wish to attend will communicate with one of the undersigned *as soon as possible*, in order that the necessary arrangements for the dinner may be carried out.

We are, Sir, yours faithfully,

F. E. FREMANTLE,
County Medical Office, Hertford.

C. GORDON WATSON,
82, Harley-street, W.

May 19th, 1914.

FUCHSIN IN SOFT CHANCRE.

To the Editor of THE LANCET.

SIR,—I do not know whether fuchsin (aniline red) has ever before been used in the treatment of soft chancres. Perhaps some of your numerous readers may enlighten me on the subject and give me references.

Fuchsin in a 5 per cent. ointment with vaseline has been found of some benefit in the treatment of carbuncles, and that led me to try it in soft chancres. During the last month I have treated nine cases of undoubted soft chancre with so much benefit that I am convinced that there is no other drug which is so useful. Under ordinary treatment soft sores take about six weeks to heal up, while with fuchsin I have been able to heal them in less than two weeks. All my nine cases were of multiple chancres (from two to four), and the average duration of treatment works out at eight days. The longest is ten and the least is four days.

Two of my cases deserve special notice. One of them was complicated with an enlarged bubo in the left groin as large as a small orange. The chancre was about 1 in. by ¼ in., with a foul base. With fuchsin ointment this healed up in six days, and the bubo, which had threatened to suppurate, at once subsided, especially as the source of infection was brought under control in two days. The second case had been going on for a little over three weeks, with one large and three small ulcers. Caustics had already been applied twice by another doctor, without much benefit. So he came to me. Under fuchsin treatment I was able to heal them in 10 days. I usually prescribe a 5 per cent. ointment in vaseline of fuchsin (aniline red) to be applied to the chancre, after first washing and then drying it. If the prepuce can be brought over the glans penis no other dressing is required, although it must be noted that it stains the linen red, which is its only drawback. I ask the patient to clean the parts and apply the ointment twice a day, simply because it is difficult to get poor people to learn the benefits of keeping them clean. Otherwise, in my opinion, a single application in 24 hours will quite suffice. The ointment, when it is not freshly made, is of a beautiful red colour, but when freshly made does not look nice.

At first I applied caustics, like nitric acid, to

destroy the superficial bacteria and infected tissues. But I have found that it is not at all necessary. The ointment when applied even to the most foul ulcers clears up everything, and within 48 hours I have always seen granulations springing up. The necessity of caustics, the pain, and the mental agony of the patients, are thus relieved. The effect of fuchsin seems to correspond in some respects to that of scarlet red—viz., rapid epidermisation; but over and above this the antiseptic effect which I have noticed in fuchsin is not found in scarlet red, though I must confess I have not given the latter a fair trial in such cases. Fuchsin ointment in a greater strength than 5 per cent. may irritate the parts.

It is of no benefit in hard chancres. I tried it in two cases. Both, according to their statements, were the worse for it. On inspection I found the chancres ulcerating and discharging pus.

I am, Sir, yours faithfully,

CHHAGAN H. KANTAWALA, M.R.C.S. Eng.,
L.R.C.P. Lond.

Bombay, April 25th, 1914.

*** Fuchsin is known to have an antiseptic action, and it has been employed to a slight extent in the treatment of trypanosomiasis and occasionally for chronic ulcers, but so far as we are aware it has not hitherto been used for soft chancres. The beneficial action described by our correspondent is doubtless due to its antiseptic power and not to stimulation of the epidermis, for scarlet red, which causes much greater stimulation of the epidermis, has no antiseptic power.—ED. L.

THEORIES OF HYSTERIA.

To the Editor of THE LANCET.

SIR,—The interesting fact reveals itself from a consideration of Dr. J. A. Ormerod's lecture in THE LANCET of May 9th on the Freudian Theory of Hysteria, and from other similar writings recently published, that criticism against Freudian psychology is becoming a good deal less confident and emphatic than formerly. Any criticism in Dr. Ormerod's article beyond simple exposition of the subject under consideration was markedly tentative and vigilantly non-committal. It will be instructive to observe if this is the mark of a changed attitude on the subject.—I am, Sir, yours faithfully,

FREDERICK DILLON, M.B., Ch.B. Edin.

Leicester Borough Mental Hospital, May 14th, 1914.

THE FATALITY OF MEASLES.

To the Editor of THE LANCET.

SIR,—It seems to me that the question of the fatality of measles, referred to by Dr. J. Gordon Sharp in THE LANCET of May 9th, can only be solved when the cause of the disease has been settled. Experience of malaria, Malta fever, plague, yellow fever, sleeping sickness, and the other successfully combated affections seems to show that until we have a complete knowledge of their natural history they cannot be prevented.

Two years ago I described cell-inclusions in the blood of acute measles cases similar to those I have described in syphilis and in scarlet fever. And although I have suggested that these "bodies" are parasites and that they may be amenable to salvarsan and mercury, and have published these suggestions, little or no attempt has been made to give this method of prevention an organised trial. If these cell-inclusions are protozoal parasites and really resemble those found in human and animal syphilis, their treatment with these drugs, if continued, like quinine in malaria, until convalescence is established in all cases, should considerably lower the incidence of measles.

These cell-inclusions can be found in the peripheral blood cells of acute measles so long as the fever lasts; then they are present in the nasal and aural pus, as well as in the abscess pus for long periods. I have found them thus in every case examined up to the present time. Therefore I think the method of preventive treatment is worth a trial. I proposed giving an initial dose of 0·1 to 0·2 grm. of salvarsan intravenously, or for small children a small dose of a weak alkaline solution hypodermically; and this repeated a week later. Then each case should be given either mercury or arsenic in amounts according to practice and similar to that employed in congenital syphilis, until all peeling or purulent discharges have ceased. If, as I believe, these bodies are parasites, they should possess an extracellular phase, and then the drug should affect them, as quinine does in malaria. Such treatment is harmless, for children take arsenic well, and in the absence of any other method of prevention it may be productive of good results. I have tried it in a few cases which Dr. F. F. Caiger put at my disposal; but it must be given an organised trial on a large scale before we can judge justly of its effects. The idea is to bring about an immediate reduction of parasites and to prevent their further spread.

I am, Sir, yours faithfully,

E. HALFORD ROSS.

The Lister Institute of Preventive Medicine, Chelsea-gardens, S.W., May 11th, 1914.

AN IMPORTANT CORRECTION.

To the Editor of THE LANCET.

SIR,—Will you kindly allow me to correct an unfortunate error in the "Annual Reports" of the Royal Dental Hospital of London, School of Dental Surgery, for 1913, just issued. Mr. Frank V. Richardson, whose name was included in the Obituary Notice, is, I am glad to say, still alive and well.

I am, Sir, yours faithfully,

May 14th, 1914. THE EDITOR OF THE REPORTS.

DONATIONS AND BEQUESTS.—Under the will of the late Mr. Henry James Casey, of Tunbridge Wells, the testator left £6000 to the Walthamstow, Leyton, and Wanstead Children's and General Hospital for the endowment of six beds to bear his name and that of his wife.—The late Mr. Henry Griffith has left £500 to the Brompton Cancer Hospital.—The late Mr. J. Richardson, of Bath, has bequeathed £500 each to the Royal United Hospital, Bath; the Royal Infirmary, Liverpool; and St. Mary's Hospital, Paddington.—The late Miss Jane Whipp, of Merlewood, Prestwich, Lancs., left by will £300 to the Bury Dispensary Hospital.—Failing issue to the legatee the late Mrs. Edna Howarth, of Langdale Chase, Windermere, Westmorland, left by will certain sums to provide a wing in the Manchester Children's Hospital, Pendlebury.—By her will the late Mrs. Mary Ann Wingrove, of Southampton, left the residue of her estate, amounting to some £17,000, to be equally divided among eight charities, including Dr. Barnardo's Homes, the Devon and Exeter Hospital, Exeter, the Royal South Hants and Southampton Hospital, Southampton, and the Cancer Hospital, Brompton.—The late Mrs. Mary Elizabeth Booth, of Redhill, Surrey, left £400 each to the London Hospital, the University College or North London Hospital, the Children's Hospital, Paddington Green, and St. Mary's Hospital, Paddington.—The late Miss Sarah Anne Adams, of Coventry, Warwickshire, has left £1000 each to the Walsall Cottage Hospital, the Birmingham General Hospital, and the Coventry and Warwickshire Hospital.

THE NATIONAL INSURANCE ACT.

THE DRUG FUNDS IN SCOTLAND.

THE Scottish Insurance Commissioners have addressed a circular letter to panel practitioners in Scotland asking them for their views on the proposal made by the pharmacists that the fees for dispensing medicines for insured persons should be raised. The present fee for dispensing liquid preparations is 2*d*. for those up to and including 8 oz., and 3*d*. for more than 8 oz., with an extra fee of 2*d*. if the medicine contains an emulsion. The proposed new fee is 4*d*. for all liquid preparations of any kind and size. Similarly it is proposed to alter the dispensing fees for powders, pills, ointments, &c. The reason why the Commissioners are consulting panel doctors is because of the possibility that the proposed new fees might in some districts cause an encroachment on the "floating sixpence." The number of prescription forms used by doctors during the first medical year was equivalent in burghs to 1·92 in respect of every insured person, and in counties to 1·58. The new fees would increase the cost of each prescription by about 1½*d*., making the average fee in burghs 3·36*d*. and in counties 2·76*d*. An examination of the returns from all districts in Scotland shows that in 27 areas the increased rates could probably be allowed without trenching on the "floating sixpence," but that in 16 areas they would probably entail some encroachment, and in 15 districts in which the charge of 1*s*. 6*d*. per insured person was last year not sufficient to meet the drug bills the new fees would entail a further encroachment on the "floating sixpence." Scottish panel chemists base their claims for dispensing fees higher than those in the English tariffs on various grounds. They claim that in England the amount of medicine consumed per patient is greater than in Scotland; that in England the period for which mixtures are prescribed to last is shorter, leading to more frequent "repeats," and consequent dispensing fees. Scottish chemists also point out that whereas in England the Insurance Act had the effect of directing an increased volume of trade into the chemists' hands, in Scotland it merely changed a large proportion of the chemists' private clients into insured clients.

EXETER INSURANCE COMMITTEE.

At a meeting of the Exeter Insurance Committee the Medical Benefit Subcommittee reported negotiations which had taken place with regard to the allocation of insured persons who had not chosen their medical attendants. The subcommittee had had interviews with representatives of the medical men on the panel and with the panel subcommittee, and it recommended that a joint committee should consider the matter. This was adopted. Notice was given of a motion by a member of the committee:—

That the panel doctors be informed that the agreement entered into with them on July 1st, 1913, as to the division of the funds accumulated in respect of insured persons who have not selected a doctor expired on Oct. 12th, 1913, and this committee considers itself free to deal with such accumulations in such manner as it thinks desirable.

SHEFFIELD INSURANCE COMMITTEE.

The Medical Benefit Subcommittee at Sheffield presented a report upon a charge against a member of the panel who had admitted that he had given certificates of incapacity to a man who during the time covered by some of them was to his knowledge in prison. The certificates were given after the patient's discharge, when for one week he remained unfit for work, and the defence of the medical practitioner was that the man was in fact in a condition of illness which rendered him incapable of work during the period of his imprisonment. It was pointed out that each certificate stated that the patient had been examined on the date on which the certificate was given, and in accordance with the report of the subcommittee the Insurance Committee censured severely the medical man reported upon, the chairman observing that the subcommittee's recommendation erred on the side of leniency.

PHARMACISTS AND THE DEFICIENCY IN THE DRUG FUNDS.

At the May meeting of the Council of the Pharmaceutical Society a report from the association's executive committee was received and adopted, which stated that the committee had resolved "that the secretary should take immediate steps to secure a complete report of the facts in all the deficiency areas in England and Wales as a preliminary necessary to initiating effective national action." A committee of pharmacists has been appointed to meet a similar committee of the British Medical Association in connexion with the revision of the drug tariff and collateral matters.

PRESENTATIONS TO MEDICAL MEN.—A numerous and representative gathering of Llandudno residents took place in the town hall on May 13th to witness a public presentation to Dr. Thomas Dalton, on his retirement from practice, in recognition of his services to the town during almost half a century as a medical practitioner and as a public man. Lord Mostyn presided, and Lady Mostyn, on behalf of the subscribers, presented Dr. Dalton with a valuable service of silver plate. A letter was read from the secretary of the Queen of Roumania expressing Her Majesty's feelings of esteem and gratitude for Dr. Dalton, and associating herself whole-heartedly with the homage which his numerous friends wish to offer to him at the close of his professional career. Later in the evening Dr. Dalton was entertained at a complimentary banquet at the Imperial Hotel, Colonel Lloyd Mostyn presiding, and among the guests were most of the medical practitioners of the town and district.—Mr. W. Percy Blumer, F.R.C.S. Edin., of Sunderland, who has resigned the appointment of honorary surgeon at the Sunderland Royal Infirmary on leaving for London, has been presented with two framed photographs of himself, in recognition of his valuable services to the infirmary. One of the photographs will remain in the infirmary.—Mr. C. J. W. Pinching and Dr. C. Firth were presented at the monthly meeting of the committee of management of the Gravesend Hospital held on May 18th (the birthday of both recipients) with silver inkstands bearing the following inscriptions:—"To Charles John William Pinching, Esq., M.R.C.S. Eng., M.S.A., by the President, Vice-Presidents, Trustees, Hon. Auditors, Committee of Management, and his colleagues on the Medical Staff, in appreciation of thirty-six years' service as Honorary Surgeon to the Gravesend Hospital. May 18th, 1914." "To Charles Firth, Esq., M.D. Lond., F.R.C.S. Eng., by the President, Vice-Presidents, Trustees, Hon. Auditors, Committee of Management, and his colleagues on the Medical Staff, in appreciation of thirty-one years' service as Honorary Surgeon to the Gravesend Hospital. May 18th, 1914." The presentations were made by Lord Darnley, who, in thanking Mr. Pinching and Dr. Firth for their work for the hospital, said it had been his lot to hear a certain number of hard things said about the doctors in connexion with their work among the poorer classes, but it was his very firm belief that there was no class of the whole community who gave so much voluntary help, both in their private practice and in their services to the hospitals, as the doctor.

Medical News.

ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At a meeting of Comitia of the Royal College of Physicians on April 30th, and of the Council of the Royal College of Surgeons on May 14th, diplomas of L.R.C.P. and M.R.C.S. were respectively conferred by each College on the following 105 candidates, who have passed the Final Examination in Medicine, Surgery, and Midwifery of the Conjoint Examining Board:—

Francis Dighton Annesley, Guy's Hospital; David Charles Gordon Ballingall, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Irene Bastow, Royal Free Hospital; Stanley Samuel Beare, L.D.S. Eng. Middlesex Hospital; Howard Alexander Bell, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Sadashiv Vaman Bhat, L.M. & S. Bombay, Bombay University and Middlesex Hospital; Henry Cecil Billings, London Hospital; Sydney Guy Billington, M.B., B.S. Lond., Birmingham University; Auguste Rene Bourgault-Ducondray, University College and London Hospital; Ernest Cordley Bradford, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; John Ebenezer Kelly Brown, M.B., Ch.B. New Zealand, University of New Zealand and London Hospital; William Burt, St. Thomas's Hospital; George Maclean Campbell, Bristol University; Samuel Caplan, St. Mary's Hospital; Francis Laird Cassidi, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Arthur Chance, M.B. Dub., Dublin University; Harold Garrett Chaplin, St. Thomas's Hospital; Francis Howard Cleveland, St. Bartholomew's Hospital; Gerald Cock, Charing Cross Hospital; Gideon Robert Ernest Colquhoun, Cambridge University and St. George's Hospital; Edward Worthington Connolly, M.D., Kingston University and University College Hospital; Geoffrey Moore Cowper, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Thomas Hungerford Cresswell, L.M.S.S.A., Middlesex Hospital; Christopher Dean, B.A. Oxon., Oxford University and Guy's Hospital; Arthur Wesley Dennis, B.A. Oxon., Oxford University and St. Thomas's Hospital; Ismail Fahmy Dhay, Cairo Medical School and Guy's Hospital; Mary Agatha Doherty, M.B. Toronto, Toronto University and Royal Free Hospital; Eric Donaldson, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Robert Ellis, Birmingham University and St. Bartholomew's Hospital; George Cranston Fairchild, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Septimus Alexander Forbes, London Hospital; Sourendra Mohon Ghosh, L.M. & S. Calcutta, Calcutta University; Frank Brayshaw Gilhespy, University College Hospital; Charles Leonard Gimblett, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Charles Hart Medlicott Gimlette, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Samuel Sowray Greaves, Leeds University; James Herbert Hadaway, Middlesex Hospital; Moustafa Hammouda, Cairo Medical School and University College Hospital; Mohammed Zaky Hanafy, Guy's Hospital; Thomas Watson Hancock, London Hospital; Arthur Geoffrey Patteson Hardwick, London Hospital; Arthur Dodsworth Haydon, B.A. Cantab., Cambridge University and St. Thomas's Hospital; John Higgins, St. Mary's Hospital; Norman Hodgson, M.B., B.S. Durham, Durham University; James Dennistoun Jones, B.A. Cantab., Cambridge University and London Hospital; John Herbert Jordan, B.A. Cantab., Cambridge University and Middlesex Hospital; Mildred Archer Jukes, Royal Free Hospital; Rustam Murwan Kharegat, B.A. Bombay, Bombay University and University College Hospital; Harold Dunmore Lane, London Hospital; Frank Winter Lawson, Guy's Hospital; David Llewellyn Lewis, London Hospital; Harry Audley Lucas, Cambridge University and Middlesex Hospital; Charles Virgil Nunuz Lyne, King's College Hospital; Arthur Griffith Maitland-Jones, London Hospital; Edward Graeme Martin, B.A. Cantab., Cambridge University and Guy's Hospital; Owen David Baker Mawson, London Hospital; Tottakat Krishna Menon, Madras Medical College and Charing Cross Hospital; Vivian Mercer Metivier, St. Bartholomew's Hospital; Henry Felix Mullan, London Hospital; Frank Andrew Miller Nelson, London Hospital; Harold Parker, Leeds University; Gwilym Rhys Pennant, University College of South Wales, Cardiff and London Hospital; Mahamarakelegey Gregory Perera, Ceylon Medical College and London Hospital; Frederick Stanley Lawrence Piggott, Cambridge University and St. Thomas's Hospital; Alexander Frederic Potter, St. Thomas's Hospital; Edna Mary Powell, Royal Free Hospital; Ibrahim Ibrahim Abdel Rahman, Cairo Medical School and University College Hospital; John Beaufoy Randall, B.Sc. Lond., University College and St. Bartholomew's Hospitals; Pierre Joseph Francois Louis Rathier du Verge, Guy's Hospital; John Rawlings Rees, B.A. Cantab., Cambridge University and London Hospital; Geoffrey Bower Richardson, St. Bartholomew's Hospital; James Wilson Richardson, M.D., C.M. McGill, McGill University and London Hospital; Cecil Arthur Robinson, St. Mary's Hospital; Arthur Norman Rushworth, Cambridge University and St. Bartholomew's Hospital; Ahmed Sabri, Cairo Medical School and St. Thomas's Hospital; Alexander Elder Saunderson, Liverpool University; Philip Savage, Guy's Hospital and Durham University; Claude Justin Scholtz, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Allan Seddon, M.B., Ch.B. Liverpool, Liverpool University and London Hospital; Gerard Prideaux Selby, B.A. Oxon., Oxford University and St. Bartholomew's Hospital; Bager Zainulabedin Shah, Bombay University and St. Bartholomew's Hospital; Mohammad Sharaf, Cairo Medical School and St. George's Hospital; John Edward Sharp, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Herbert Sharpe, B.A. Cantab., Cambridge University and Guy's Hospital; Lewis Wilton Shelley, B.A. Cantab., Cambridge University and St. Thomas's Hospital; George Holmes Smith, L.D.S. Eng., St. Mary's Hospital; Leslie Muir Smith, Guy's Hospital; Thomas Victor Somerville, London Hospital; Edward Benjamin Sunderland, University College Hospital; William Edmund Taylor, Bristol University; Thomas Harold Thomas, London Hospital; Alexander Wilmot Uloth, Cambridge University and St. George's Hospital; Sadanvala Bashiam Venugopal, L.M. & S. Madras, Madras Medical College and Guy's Hospital; Vernon Charles Whitby Vickers, Cambridge University and St. Mary's Hospital; Robert Allez Rotherham Wallace, M.B., Ch.M. Sydney, Sydney University and St. Bartholomew's Hospital; Francis Clark Watson, Oxford University, St. Thomas's, and St. George's Hospitals; George William Watson, Leeds University; Leslie Gordon White, Leeds University; Henry Parks Whitworth, Guy's Hospital; Hugh Lawrence Widdowson, M.B., Ch.B. New Zealand, University of New Zealand; Stanley Murray Wilcox, Cambridge University and St. George's Hospital; Sydney Arthur Wilkinson, St. Thomas's Hospital; Richard Williams, London Hospital; Alfred Willis, Guy's Hospital; Arthur Graham Winter, London Hospital; and Kenneth John Yeo, Cambridge University and London Hospital.

Diplomas in Tropical Medicine and Hygiene were granted to the following four candidates:—

Vivian St. John Croley, L.R.C.P. & S. Edin., and L.F.P. & S. Glasgow, Edinburgh University and London School of Tropical Medicine; Gordon Gray Jolly, Capt. I.M.S., M.B., Ch.B. Edin., Edinburgh University and London School of Tropical Medicine; Maharaj Krishna Kapur, L.M. & S. Punjab, Lahore Medical College; and Andrew Murphy, Major I.M.S., M.B., Ch.B., Royal University of Ireland, Cork and London School of Tropical Medicine.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—At the First Professional Examination in Anatomy and Physiology for the diploma of Fellow of the above College, held on May 6th, 7th, 12th, 13th, 14th, and 15th, 122 candidates presented themselves for examination, of whom 40 passed and 82 were rejected. The following is a list of the successful candidates:—

Arthur Wilfrid Adams, Bristol University and London Hospital; Lalit Mohan Banerji, M.S. Calcutta, Calcutta Medical College and St. Bartholomew's Hospital; Charles Harrison Barber, Captain, I.M.S., B.A. Oxon., M.R.C.S., L.R.C.P., Oxford University and King's College Hospital; John Hamilton Barclay, M.B., B.S. Durh., M.R.C.S., L.R.C.P., Durham University and London Hospital; Lyle John Cameron, M.D. Manitoba, University of Manitoba, Canada, and King's College; Norman Brandon Capon, Liverpool University; John Beresford Christian, Major, I.M.S., M.R.C.S., L.R.C.P., St. George's Hospital and King's College; Robert Hood Fleming, B.Sc. Lond., Middlesex Hospital; Thomas Gordon Fleming, M.B., B.S. Adelaide, Adelaide University and London Hospital; Alexander Galletly, M.B., Ch.B. Edin., Edinburgh University and King's College; John Gilmour, Durham University; George Turner Gimlette, B.A. Oxon., Oxford University and St. Thomas's Hospital; Arthur Oliver Gray, M.R.C.S., L.R.C.P., Middlesex Hospital; Douglas Green, M.B., B.S. Lond., Sheffield University and St. Bartholomew's Hospital; Frank Keith Hayman, Bristol University and London Hospital; Thomas Albert Hindmarsh, M.B., B.S. Durh., M.R.C.S., L.R.C.P., Durham University and London Hospital; George Philip Buckingham Huddy, London Hospital; Edgar Howard Lake, Middlesex Hospital; Mary Francis Lucas, M.B., B.S. Lond., Royal Free Hospital; Frederick Buick McCarter, B.A., M.B., B.Ch., B.A.O. Dub., Dublin University; Rodney Honor Maingot, St. Bartholomew's Hospital; Charles Bertram Marshall, M.D., B.S. Manch., Manchester University; Frank Beauchamp Martin, M.B., B.S. Melb., Melbourne University and Middlesex Hospital; Vaman Raghunath Mirajkar, L.M. & S. Bombay, Bombay University and St. Bartholomew's Hospital; John Kerr Muir, Middlesex Hospital; Charles Noon, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital; Aubrey Radford, M.B., Ch.B. Edin., Edinburgh University; Griffith James Randall, B.Sc., University College, Cardiff, and Westminster Hospital; Nicol McNicoll Rankin, M.B., Ch.B. Glasg., Glasgow University, Middlesex and London Hospitals; Louis Carnac Rivett, M.R.C.S., L.R.C.P., Cambridge University and Middlesex Hospital; Harold Bedford George Russell, M.A., B.C. Cantab., M.R.C.S., L.R.C.P., Cambridge University and St. Bartholomew's Hospital; Henry Richard Sheppard, St. Thomas's Hospital; Archibald Walter Scot Skirving, M.B., C.M. Sydney, Sydney University and University College; Norman Armitage Sprott, B.A. Oxon., Oxford University and St. Thomas's Hospital; James Swan, M.B., Ch.B. Edin., Edinburgh University and London Hospital; Sydney William Frank Underhill, B.A. Oxon., Oxford University; Cecil Pembrey Grey Wakeley, King's College; William Tom Warwick, B.A. Cantab., Cambridge University and Middlesex Hospital; William Edwin Wilson, St. Bartholomew's Hospital; and Alberto Medardo Zamora, M.B., B.C. Cantab., M.R.C.S., L.R.C.P., Cambridge University and Guy's Hospital.

At a meeting of the Council of the College held on May 14th Licences in Dental Surgery were conferred upon 41 candidates who have passed the necessary examination and have complied with the by-laws. The following is the list of successful candidates:—

Gerald Beaumont Ash, B.A. Cantab., Middlesex and Royal Dental Hospitals; Alexander Douglas Ball, Charing Cross and Royal Dental Hospitals; John Walter Beacock, Guy's Hospital; William Milton Bull, London Hospital; Donald Clewer and Arthur Hedley Cole, Guy's Hospital; Henry Robert Pyemont Collett, Manchester University; Henry Charles Corke and George Lambert Cutts, Guy's Hospital; Arthur Thomas Dally, Middlesex and Royal Dental Hospitals; Ulysses James Garfield Dancer, Birmingham University; Robert Lester Donn, Victor Robert Dyke, and Herbert James Edwards, B.A., Guy's Hospital; Gilbert George Ellis,

Manchester University; Alan Basil Hacking, Middlesex and Royal Dental Hospitals; William Cecil Hammond-Williams, Guy's Hospital; Albert Ernest Henry, B.Sc. Birm., Birmingham University; Reginald John Inder, Middlesex and National Dental Hospitals; Thomas Henry Jackson, Charing Cross and Royal Dental Hospitals; Henry Jennings, Liverpool University; Sydney Emil Johnson, Guy's Hospital; Lionel Everitt Markham, Durham University; George Douglas Moore, Middlesex and Royal Dental Hospitals; Glenn Fowler Musson, Leeds University; Winifred Amelia Oaten, Royal Free and National Dental Hospitals; Frank Henry Parsonage, Manchester University; Thomas Harold Parsons, Birmingham University and London Hospital; Reginald Jack Pickett, Guy's Hospital; Ernest Russell Ray, Middlesex and Royal Dental Hospitals; Alfred Thomas Rycroft, Ernest Charles Rycroft, and Harold Obsert Salt, Guy's Hospital; Leslie Bacchus Smith, Middlesex and Royal Dental Hospitals; Hubert Horace Stones, Manchester University; Norman David Swayne Straton, Charing Cross and Royal Dental Hospitals; Frederick Edward Alan Thorman, Birmingham University; Maurice George Whitten, Guy's Hospital; Arthur Stuart Whitworth and Keith Eric Wood, Middlesex and Royal Dental Hospitals; and John Edward Wright, Guy's Hospital.

THE LORD MAYOR TRELOAR CRIPPLES' HOSPITAL AND COLLEGE, ALTON.—The first festival dinner of this hospital and college was held in the hall of the Merchant Taylors' Company on May 13th, those present numbering about 150. The chair was taken by the Right Hon. A. J. Balfour, M.P. The medical men present included the Master of Downing, Sir Bertrand Dawson, Mr. J. Berry, Mr. F. F. Burghard, Mr. O. L. Addison, Dr. F. Batten, Mr. John Morgan, C.V.O., Mr. H. S. Pendlebury, Mr. Walter Edmunds (members of the honorary medical board), Mr. H. J. Gauvain (resident medical superintendent), Dr. Guy Stephen, Mr. D'Arcy Power, Dr. Henry Hetley, and Sir Charles Wyndham, who forsook practice for the stage so many years ago that few remember his connexion with the medical profession. Mr. Balfour, in proposing the toasts of "The King" and of "The Royal Family," said that though it was usual to present these toasts with few words he must remind his hearers that it was largely due to the energy of the Royal Family that the hospitals of the metropolis were on their present basis. The Queen and Queen Alexandra especially had shown their interest in them, and the latter particularly with reference to this hospital. In proposing the toast of "Prosperity to the Alton Hospital and College" Mr. Balfour said that he would lay down the proposition without fear of contradiction that they could feel assured that money given in support of the hospitals of this country would lessen human suffering and increase human efficiency and happiness, and would not be wasted. He dwelt on the threefold work of hospitals—viz., (1) the alleviation and prevention of human suffering; (2) means for medical education; and (3) promotion of research. He dwelt on each point, and with regard to the last said he did not think it would be possible to exaggerate the change that had come over medical practice during his own recollection, and he could not doubt that they were on the verge of great developments. No branch of scientific research had had more beneficial results than medical science, and he urged that they should take their national share in that international work. As to the Treloar Hospital, he had visited it last year, and was so impressed by all that he saw there that he felt that every humane man and every woman should give it their warmest support. The main work was to deal with those of tender years whose whole future if they survived would be overshadowed by this disease, tuberculosis, which if taken in time could be successfully dealt with. The place of this hospital could not be supplied by any other hospital or institution whatever, for a special institution was essential for the work. Alton Hospital combined all that could be given both by a hospital and by a sanatorium. The patient was received under conditions suited to his disease and treated as long as the case required; his subsequent course was followed, and if a relapse occurred he could be again received and treated by those who knew the early history of his case. He asked them to contribute to what was an assured success, and he felt confident that in so doing they would contribute to the felicity of the human race and to the relieving from a life-long burden of those who could neither help themselves nor ask for help. The list of donations was then read, amounting, with two donations of £1000 each, to £6731. Sir William Treloar, in responding, said they had now built a nurses' home to accommodate 35 more nurses, and to be called Queen Alexandra's Home. This would enable them to take 50 more children in addition to the 220 they always had. Mr. Gauvain replied for the medical staff. Other toasts were "The Right Hon. the Lord Mayor and the Corporation of the City of London," proposed in humorous vein by Lord Reading, the Lord Chief Justice, and responded to, in the unavoidable absence through accident of the Lord Mayor, by Alderman Sir Joseph Savory; "The Honorary Medical Board," proposed by Lord Moulton," and replied to by Mr. John Morgan, C.V.O.; "The Chairman," given by the Bishop of London; and "The Merchant Taylors' Company," responded to by the Master, Mr. C. G. Kekewich.

AT a meeting of delegates of the Devonport Liberal Association, held on May 15th, Sir John Collie was adopted as the second Liberal candidate to contest the constituency at the next General Election.

METROPOLITAN HOSPITAL. — Sir Frederick Banbury, Bart., M.P., will preside at the annual festival dinner, which will be held in aid of the funds of the Metropolitan Hospital on Friday, July 3rd, at the Whitehall Rooms, Hotel Metropole, London.

THE Bolingbroke lecture in connexion with the South-West London Medical Society will be delivered at the Bolingbroke Hospital, Wandsworth Common, on Wednesday, June 10th, at 9 P.M., by Dr. W. Hale White, on the subject of Prognosis. All medical men are welcome.

CHELSEA CLINICAL SOCIETY. — The annual general meeting of this society will be held on Tuesday next, May 26th, at St. George's Hospital, in the club rooms of the Medical School, at 8.30 P.M. After the usual official business the President, Dr. T. B. Hyslop, will deliver an address on Self-control.

MEDICAL SOCIETY OF LONDON: LETTSOMIAN LECTURES, 1914.—The postponed Lettsomian lectures on Dysentery will be delivered by Dr. F. M. Sandwith at 9 P.M. on Tuesday, June 9th, Thursday, June 11th, and Thursday, June 18th. The second and third lectures will be illustrated by pictures and pathological specimens, mostly borrowed from the London School of Tropical Medicine.

FACTORY GIRLS' COUNTRY HOLIDAY FUND.—In the report of this fund for 1913 an earnest appeal for financial help is made. Owing to the effects of strikes on the girls themselves who contribute to the fund, to the effects of heavy taxation on the generous public, and to the increase in railway charges, the useful work of the fund has been much curtailed. Subscriptions and donations should be sent to the honorary treasurer, 19, Norfolk-crescent, Hyde Park, S.W. The bankers are the London County and Westminster Bank, Holborn Circus Branch.

ROYAL INSTITUTE OF PUBLIC HEALTH: LECTURES ON INDUSTRIAL HYGIENE.—A course of lectures on industrial hygiene will be given at the institute by Sir Thomas Oliver, M.D., professor of medicine in the University of Durham College of Medicine, Newcastle-upon-Tyne, during the ensuing summer session on Wednesdays and Thursdays, at 4 o'clock. On May 27th the subject will be Factory Legislation; on May 28th, Injurious Occupations; on June 10th, Coal Mining; on June 11th, Gold Mining; on July 8th, Ankylostomiasis; and on July 9th, Dangerous Trades which have been Rendered comparatively Harmless. The fee for the course is 1 guinea.

ILFORD AND ITS LATE MEDICAL OFFICER OF HEALTH.—At the monthly meeting of the Loxford Ward of the Ilford Ratepayers' Association held on May 13th, Mr. C. F. Stovin, D.P.H. Lond., was presented with a gold watch inscribed as follows: "Presented to Dr. C. F. Stovin by members of the Loxford Ward of the I.R.A. and friends, 13th of May, 1914." Mr. W. H. Burniston, who presided and made the presentation, also read a manuscript address, signed by himself as chairman of the association, in which regret for the termination of Mr. Stovin's appointment was expressed. The address contained the following passage:—

> We entirely agree with the sentiment in the Local Government Board letter "that the medical officer of health has done nothing to merit discharge from his office," and we deplore the events that now deprive the ratepayers of Ilford of your wise and valuable experience in the administration of the Public Health Department.

Mrs. Stovin was presented with a bouquet of pink roses. Mr. Stovin having expressed his gratitude for the honour

which had been done him and his wife, a number of speeches were made by members of the association and other ratepayers of Ilford expressive of approval of the work of their medical officer. Councillor Smith remarked that he had always found Mr. Stovin courteous and perfectly fair; Mr. Stovin's annual reports were a credit to the town, and the absolute loyalty, confidence, and respect of the whole of the public health and hospital staff to their medical officer spoke volumes.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Milk Bill.

THE text of the Milk Bill which Mr. HERBERT SAMUEL, the President of the Local Government Board, has introduced into the House of Commons has been issued. The right honourable gentleman briefly explained the scope of the measure at the time of the introduction.[1] As the measure is important the text of some of its principal provisions may be given.

Clause 1 prohibits the sale of tuberculous milk. It is in the following terms: "If a person (*a*) sells, or offers or exposes for sale, or suffers to be sold or offered or exposed for sale, for human consumption or for use in the manufacture of products for human consumption; or (*b*) uses or suffers to be used in the manufacture of products for human consumption; the milk of any cow which has to his knowledge given tuberculous milk, or which is suffering from emaciation due to tuberculosis, or from tuberculosis of the udder, or from acute inflammation of the udder, or from any disease liable to infect or contaminate the milk, he shall be guilty of an offence against this Act, unless he proves that he did not know and had no reason to suspect that the milk so sold or offered or exposed for sale or used was the milk of such a cow."

In Clause 2 an extension is proposed of the power to make orders respecting milk and dairies. It sets out that the purposes for which general and special orders with respect to milk and dairies may be made by the Local Government Board include: "(*a*) the registration with local authorities of dairies; (*b*) the inspection of dairies and persons employed in or about dairies; (*c*) the prevention of the sale for human consumption or for use in the manufacture of products for human consumption, of infected, contaminated, or dirty milk or the milk of a diseased cow; (*d*) the prohibition of the addition of colouring matter and the prohibition or regulation of the addition of skimmed or separated milk, or water, or any other substance, to milk intended for sale for human consumption, and the prohibition or regulation of the sale for human consumption of milk to which such an addition has been made; (*e*) the regulation of the cooling and conveyance of milk intended for sale for human consumption; (*f*) the labelling or marking of receptacles of milk for sale for human consumption and the identification of churns and vessels used for the conveyance of such milk."

When a medical officer of health of a county or a county borough is of opinion that tuberculosis is caused, or is likely to be caused, by the consumption of the milk supplied from any dairy within his area, he is provided with powers under Clause 3 and Schedule I. to report the matter to the county or county borough council. This authority, if in their opinion the dairyman has failed to show cause why an order should not be made, may make an order prohibiting him, either absolutely or unless such conditions as may be prescribed in the order are complied with, from supplying for human consumption, or using or supplying for use in the manufacture of products for human consumption, any milk from the dairy until the order has been withdrawn.

Clause 4 is important, and deals with the obligation to inspect dairies in certain cases. It is to the following effect:—"1. If the medical officer of health of any local authority has reason to suspect that tuberculosis is caused, or is likely to be caused, by the consumption of any milk which is being sold or exposed or kept for sale within the area of the local authority he shall endeavour to ascertain the source or sources of supply, and on ascertaining the facts shall forthwith give notice of them to the medical officer of health of the county or county borough in which the cows from which the milk is obtained are kept, whether the dairy where they are kept is within or without the area of the local authority, unless the local authority are themselves the council of that county or county borough. 2. On the receipt of such notice it shall be the duty of the medical officer of health of the county or county borough to cause the cattle in the dairy, and, where the case so requires, the persons employed therein, to be inspected, and to make such investigations as may be necessary. 3. Sufficient notice of the time of the inspection shall be previously given to the local authority whose medical officer of health gave the notice, to allow that officer or a veterinary inspector or other veterinary surgeon appointed by the authority being present at the inspection if the authority so desire. 4. The council of the county or county borough on whose medical officer of health the notice is served shall send to the medical officer of health of the local authority who gave the notice copies of any reports which may have been made by the medical officer of health making the inspection, and of any veterinary or bacteriological reports which may have been furnished to him, and shall give him information as to whether any action has been taken upon those reports and as to the nature of that action."

The Bill also deals with the power to take samples of milk, appointment of veterinary inspectors, regulations as to imported milk, establishment of milk depôts, enforcement of duties of local authorities, penalties, and application of the Bill to London.

Milk and Dairies (Scotland) Bill.

The Milk and Dairies (Scotland) Bill which Mr. MCKINNON WOOD, the Secretary for Scotland, recently introduced in the House of Commons has been printed. Its scope and aims are set forth in a memorandum. That memorandum states that the main objects of this Bill are to provide for—"1. The appointment by local authorities of a veterinary inspector. 2. The inspection of dairies and of the cattle therein. 3. The registration of dairies. 4. The provision of by-laws for—(*a*) the inspection of cattle; (*b*) the construction, &c., of dairies; (*c*) the prevention of impurities in milk and the cleanliness of persons engaged in dairy business; (*d*) the precautions to be taken by dairymen against infection. 5. The issue of regulations by the Local Government Board for Scotland for—(*a*) the prevention of danger to public health from the importation of milk, and (*b*) securing the supply of pure and wholesome milk. 6. The prohibition of the supply of milk which has caused or is likely to cause infectious disease. 7. The establishment by local authorities of milk depôts for the sale of milk specially prepared for infants. The provisions as to registration supersede the provisions as to the registration of dairies contained in the Contagious Diseases (Animals) Acts, and the orders made thereunder. The provisions as to the inspection of dairies and prohibition of the supply of milk are an extension of those contained in Sections 60 and 61 of the Public Health (Scotland) Act, 1897. The Board of Agriculture and Fisheries have issued an order under the Diseases of Animals Act, 1894, dealing with tuberculous cows, and providing for the payment of compensation in cases of slaughter. The Treasury are prepared, subject to the assent of Parliament, to sanction the payment from the Exchequer of one-half of the net amount paid by way of compensation for a period of five years."

Infants Milk Bill.

The Infants Milk Bill, introduced in the House of Commons by Mr. DOUGLAS HALL, is the third measure dealing with milk the text of which is published within a week. It is designed to secure the supply of pure milk to mothers of the poorest classes. It is a short measure.

Ireland and Public Health Grants.

It is now announced that the Government proposes to insert in the Finance Bill provisions which will make Ireland's share of the new money made available to local authorities by the Budget £697,500 for a full year. This money will be at the general disposal of the Irish Government and Parliament. This sum includes £67,500 for tuberculosis, nursing, and pathological laboratories.

Midwives (Scotland) Bill.

The Midwives (Scotland) Bill has been read a third time and passed in the House of Lords. On report an amendment was introduced recognising for the purpose of the Bill the qualification of midwives holding the certificate of the National Maternity Hospital, Dublin. This Bill has still to be considered by the House of Commons.

HOUSE OF COMMONS.

WEDNESDAY, MAY 13TH.

A Hospital Ship.

Mr. YERBURGH asked the First Lord of the Admiralty whether, in the Estimates for 1912–13, money was allocated for the provision of a hospital ship; whether such a ship was designed; whether the design was approved by the medical department; whether the construction of the ship had not been proceeded with; whether, in place of it, a merchant ship acquired by the Admiralty was being converted by them into a hospital ship; if so, what was the reason of this action on their part; and had it the approval of the medical department.—Mr. CHURCHILL replied: The facts are as stated in parts 1 to 5 of the question. As regards

[1] THE LANCET, May 16th, 1914, p. 1434.

the sixth part of the question, I would refer the honourable member to the Admiralty letter to the Treasury printed on pages 103 to 104 of the Navy appropriation account for 1912-13. The arrangements for the purchase and conversion of the vessel have been drawn up in consultation with the medical department of the Admiralty throughout.

Insured Persons and Change of Residence.

Sir CLEMENT KINLOCH-COOKE asked the honourable Member for St. George's-in-the-East as representing the Insurance Commissioners what provision was made for change of doctor in the case where an insured person moved from one place to another; and, if notice was given on the day of removal, say from one part of London to another, how long a time should elapse before an insured person was given another doctor in his or her new domicile.—Mr. WEDGWOOD BENN answered: A fresh choice of doctor is exercised in the circumstances referred to by means of the medical card already in the insured person's possession. The card sets out clearly the steps to be taken by the insured person for this purpose and no delay need occur.

THURSDAY, MAY 14TH.

The Drug Fund.

Mr. GODFREY LOCKER-LAMPSON asked the honourable Member for St. George's-in-the-East whether a number of Insurance Committees were finding that the claims on their drug fund for chemists' accounts were growing in amount as compared with last year; whether such was the case with committees which had insufficient money to pay the chemists' accounts in full last year; and what the Government proposed to do to meet these increasing deficiencies.—Mr. WEDGWOOD BENN answered: Until the total sums available to each Insurance Committee have been finally ascertained and the accounts have been scrutinised the assumptions underlying the question cannot be accepted. In a few cases the Insurance Commissioners have received information that the accounts for the quarter which ended on the 11th of last month are in excess of those for the same quarter of last year, but no comparison between the amounts can properly be made until the accounts for each period have been examined.

Mr. G. LOCKER-LAMPSON asked the honourable gentleman whether the chemists under contract with the West Hartlepool Insurance Committee had had 30 per cent. deducted from their bills for last quarter, chiefly because the committee had insufficient funds to meet the bills; whether there was still outstanding and unpaid 10 per cent. of the chemists' bills for each quarter of last year; whether the number of prescriptions dispensed in that area had increased from 1800 in the quarter ending April, 1913, to 2200 in the corresponding quarter this year, and the cost increased from about £525 to £754; and whether the chemists and the Insurance Committee had expressed their dissatisfaction to the Commissioners.—Mr. WEDGWOOD BENN replied: The Insurance Commissioners hope to be able to inform the committee referred to at an early date of the total sum available to them from the drug fund for the past year. In the meantime, any payments made to the chemists are in the nature of advances only. For the reasons already explained in a reply to the honourable Member no comparison can properly be made at present between the accounts for last quarter and for the corresponding period of last year.

Institutional Treatment of Insured Persons.

Mr. GOULDING asked the Chancellor of the Exchequer whether, in addition to the proposals outlined in his speech in introducing the Budget, he would consider the possibility of placing adequate institutional treatment at the disposal of insured persons as part of their medical benefit.—Mr. WEDGWOOD BENN (on behalf of Mr. LLOYD GEORGE) answered: My right honourable friend will be glad to consider the honourable Member's suggestion, though I would remind him that the provision of grants in aid of the voluntary hospitals would necessarily raise the question of State control.

Institutional Treatment of Tuberculosis.

Replying to Mr. ASTOR, Mr. HERBERT SAMUEL wrote: 115 councils have submitted to the Local Government Board schemes for providing institutional treatment for persons suffering from tuberculosis, and in all these cases the scheme either expressly or by implication provides for the treatment of non-insured as well as insured persons. There are now six county councils and five county borough councils which have not yet submitted such schemes. In the case of one of these counties, the Isles of Scilly, no scheme is needed. In another (London) arrangements for providing institutional treatment for the non-insured as well as the insured population are now being developed. Of the county boroughs, two, Bournemouth and Grimsby, will, I have reason to believe, submit schemes at an early date.

Domiciliary Treatment of Uninsured Tuberculous Persons.

Mr. ASTOR asked the President of the Local Government Board whether the local authorities which undertook the treatment of uninsured persons suffering from tuberculosis within their district, with the aid of the Hobhouse grant, had power to provide for persons in receipt of domiciliary treatment the following among other articles of food—namely, milk, butter, eggs, bread, fish, and meat; and, if so, whether he would state what statute or statutes gave local authorities the power to make the above provision.—Mr. HERBERT LEWIS (on behalf of Mr. HERBERT SAMUEL) answered: My right honourable friend is in communication with the Treasury on this subject, and is not at present in a position to answer the question.

Grants for Expert Diagnosis.

Mr. CHARLES BATHURST asked the Chancellor of the Exchequer whether, in connexion with the proposed Government subsidy for the institution of pathological laboratories, he would consider the need of research work in connexion with contagious diseases, such as anthrax, tuberculosis, glanders, cow-pox, and foot-and-mouth disease, which were common to human beings and domestic animals, and apply a portion of the proposed grant towards the conduct of such research and the greater coöperation of the medical and veterinary professions in the interests of human health.—Mr. LLOYD GEORGE said in reply: The grants proposed are in respect of laboratories to be used primarily for purposes of expert diagnosis and not of research, but I understand that certain of the subjects mentioned by the honourable Member are engaging the attention of the Medical Research Committee.

MONDAY, MAY 18TH.

"Form Medical 32."

Mr. CHARLES BATHURST asked the honourable Member for St. George's-in-the-East why Form Medical 32 of the Insurance Commissioners was withdrawn; and whether, in view of the complaints consequent upon the inability of insured persons to obtain medical benefit owing to the difficulty of obtaining a medical card, the Commissioners would re-issue Form Medical 32, making it obtainable from such persons' approved society only.—Mr. WEDGWOOD BENN answered: The form referred to was part of the system which has now been superseded, and its adoption is incompatible with the present system. The form of application for a medical card which takes its place is obtainable at all post-offices, and no difficulty should be experienced by insured persons in securing a medical card on application.

BOOKS, ETC., RECEIVED.

ALLEN, GEORGE, London.

Dr. Ivor's Wife. By Mary Kernahan (Mrs. Charles Harris). Price 6s. net.

The Great Problems. By Bernardino Varisco, Professor of Theoretic Philosophy in the University of Rome. Translated by R. C. Lodge, M.A. Price 10s. 6d. net.

AMERICAN GYNECOLOGICAL SOCIETY, New York.

Transactions of the American Gynecological Society. Vol. XXXVIII. Price not stated.

APPLETON, D., AND CO., London and New York.

Pain: Its Origin, Conduction, Perception, and Significance. By R. J. Behan, M.D. (Dr. Med. Berlin). Price 25s. net.

BAILLIÈRE, TINDALL, AND COX, London.

The Therapeutic Value of the Potato. By Heaton C. Howard, L.R.C.P. Lond., M.R.C.S. Eng. Based upon an article contributed by the author to THE LANCET of April 11th, 1914. Price 1s. net.

BALE (JOHN), SONS, AND DANIELSSON, LIMITED, London.

Text-book of Local Anæsthesia for Students and Practitioners. By Professor Dr. Georg Hirschel, Heidelberg. With an Introductory Preface by Professor Dr. Wilms. Translated by Ronald E. S. Krohn, M.D. Lond. Price 8s. 6d. net.

CASSELL AND CO., LIMITED, London, New York, Toronto, and Melbourne.

The Progress of Eugenics. By C. W. Saleeby, M.D., Ch.B., F.Z.S., F.R.S. Edin. With frontispiece by W. J. Ophelia Billinge. Price 5s. net.

CHURCHILL, J. AND A., London.

The Practice of Medicine. By Frederick Taylor, M.D., F.R.C.P., Consulting Physician to Guy's Hospital. Tenth edition. Price 18s. net.

DUTY AND DISCIPLINE MOVEMENT, 117, Victoria-street, S.W.

Anarchy or Order: Twelve Papers for the Times.

FIFIELD, A. C., 13, Clifford's Inn, London, E.C.

Philip's Wife. A play by Frank G. Layton ("Stephen Andrew"), M.R.C.S. Price 1s. net.

Damaged Goods. A play by Brieux. Translated by John Pollock, with a Preface by Bernard Shaw and a Foreword by Mrs. Bernard Shaw. Price 1s. net.

FROWDE, HENRY, AND HODDER AND STOUGHTON, London.

Outlines of Zoology. By Arthur Thomson, M.A., LL.D., Regius Professor of Natural History in the University of Aberdeen. Sixth edition. Revised. Price 12s. 6d. net.

KIMPTON, HENRY, London and Glasgow.

Eye, Nose, Throat and Ear: A Manual for Students and Practitioners. By James Forrest, M.B., Ch.B. Edin. 122 illustrations and 12 coloured plates. Price 10s. 6d. net.

LIPPINCOTT (J. B.) COMPANY, Philadelphia and London.

The Diseases of Children: A Work for the Practising Physician. Edited by Dr. M. Pfaundler and Dr. A. Schlossmann. English translation by H. L. K. Shaw, M.D., and L. La Fétra, M.D., with an introduction by L. Emmett Holt, M.D. Vol. VI. Price 21s. net.

Pharmacology, Clinical and Experimental. By Dr. Hans H. Meyer, of Vienna, and Dr. R. Gottlieb, of Heidelberg. Authorised translation into English by John Taylor Halsey, M.D. Price 25s. net.

LONGMANS, GREEN, AND CO., London, New York, Bombay, and Calcutta.

The Simpler Natural Bases. By George Barger, M.A., D.Sc. Price 6s. net.

Nucleic Acids: Their Physical Properties and Physiological Conduct. By Walter Jones, Ph.D. Price 3s. 6d. net.

X Rays: An Introduction to the Study of Röntgen Rays. By G. W. C. Kaye, B.A., D.Sc. Price 5s. net.

OXFORD UNIVERSITY PRESS, London.

Palissy, Bacon, and the Revival of Natural Science. By Sir Thomas Clifford Allbutt, K.C.B., F.R.S. Price 1s. net.

PUTNAM'S (G. P.) SONS, New York and London.

The Backward Child: A Study of the Psychology and Treatment of Backwardness. A practical manual for teachers and students by Barbara Spofford Morgan, with an introduction by Elizabeth E. Farrell. Price 5s. net.

REVIEW OF REVIEWS OFFICE, Kingsway.

Advertising and Progress. A Defence by E. S. Hole and a Challenge by John Hart. Price 5s. net.

ROUTLEDGE, GEORGE, London. E. P. DUTTON, New York.

Photography in Colours. A Text-book for Amateurs and Students of Physics, with a chapter on Kinematography in the colours of nature. By George Lindsay Johnson, M.A., M.D., B.C., F.R.C.S. Second revised edition. Price 3s. 6d. net.

SAUNDERS (W. B.) COMPANY, London and Philadelphia.

Modern Surgery, General and Operative. By John Chalmers DaCosta, M.D., Professor of Surgery, Jefferson Medical College New (seventh) edition, thoroughly revised and enlarged, with 1095 illustrations, some in colours. Cloth, 25s. net.

ST. JOHN AMBULANCE ASSOCIATION, Simla. THACKER, SPINK, AND Co., Calcutta.

The Indian Manual of First Aid. By Major R. J. Blackham, C.I.E., D.P.H. Lond., R.A.M.C. Fifth edition.

SURGEON-GENERAL'S OFFICE, Washington.

Index Catalogue of the Library of the Surgeon-General's Office, United States Army. Second Series. Vol. XVIII. Tetamore-Tzschirner.

THE MACMILLAN COMPANY, New York.

The Unconscious: The Fundamentals of Human Personality, Normal and Abnormal. By Morton Prince, M.D., LL.D. Price 8s. 6d. net.

UNIVERSITY PRESS, Manchester.

Lectures on Housing. The Warburton Lectures, 1914. By B. Seebohm Rowntree and A. C. Pigou. Price not stated.

WRIGHT, JOHN, AND SONS, LIMITED, Bristol. SIMPKIN, MARSHALL, London. THE MACMILLAN COMPANY, Canada.

Appendicitis: A Plea for Immediate Operation. By Edmund Owen, F.R.C.S., D.Sc. (Hon.), Surgeon to the French Hospital. Price 3s. 6d. net.

The British Journal of Surgery. Vol. I., July, 1913, to April, 1914. Price 30s. net.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BURKE, D. E. J., M.B., Ch.B. N.U.I., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Slieveroagh District of the county of Cork.

CARRINGTON, E. W., M.B., Ch.B. Oxon., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon at King's College Hospital.

CHEYNE, W. H. W., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon at King's College Hospital.

DISMORR, C., M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Junior Assistant Surgeon to the Gravesend Hospital.

GALPIN, PATRICK ALBERT, M.D., B.S., B.Hy., D.P.H. Durh., has been appointed an Assistant Medical Officer under the Tuberculosis (Sanatorium Benefit) Scheme by the Bristol Health Committee.

HARTLEY, J. D., F.R.C.S. Eng., L.R.C.P. Lond., has been appointed Honorary Surgeon to the Gravesend Hospital.

HEDGEMAN, W., L.R.C.P. & S. Irel., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Croom District of the county of Limerick.

HUGHES, CECIL, M.B., B.S. Lond., M.R.C.S., L.R.C.P. Lond., has been appointed Assistant Anæsthetist at King's College Hospital.

LAWRENCE, S. M., M.D., B.S. Lond., L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Assistant Surgeon to the Gravesend Hospital.

LYNE, C. V., M.R.C.S., L.R.C.P. Lond., has been appointed Assistant House Accoucheur and Assistant Casualty Officer at King's College Hospital.

MORTON, H. H. P., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon at King's College Hospital.

NEGUS, V. E., M.R.C.S., L.R.C.P. Lond., has been appointed Senior House Physician at King's College Hospital.

O'SULLIVAN, H. J., M.B., B.S. R.U.I., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Templemartin District of the county of Cork.

PINCHING, C. J., M.B., B.Ch. Oxon., M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Surgeon to the Gravesend Hospital.

PRITCHARD, N. P., M.R.C.S., L.R.C.P. Lond., has been appointed House Accoucheur and Assistant Casualty Officer at King's College Hospital.

RIGGALL, ROBERT M., Surgeon R.N., has been appointed Assistant Medical Officer to the Queen Alexandra Sanatorium, Davos Platz, Switzerland.

SMITH, SIDNEY, M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon for Diseases of Children at King's College Hospital.

THOMPSON, R. B., M.B., Ch.B. Vict., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Brixham District of the county of Devon.

WAKELY, A. S., M.R.C.S., L.R.C.P. Lond., has been appointed Junior House Physician at King's College Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ABERDEEN UNIVERSITY.—Lectureship in Public Health. Salary £400 per annum.

BARNSLEY, BECKETT HOSPITAL.—Second House Surgeon, unmarried. Salary £160 per annum, with apartments, board, and laundry.

BARROW-IN-FURNESS, NORTH LONSDALE HOSPITAL.—House Surgeon. Salary £150 per annum, with residence, board, and laundry.

BEDFORD COUNTY HOSPITAL.—Assistant House Surgeon. Salary £80 per annum, with board, lodging, and laundry.

BELGRAVE HOSPITAL FOR CHILDREN, Clapham-road, S.W.—House Surgeon for six months. Salary at rate of £75 per annum, with board, residence, and washing.

BIRMINGHAM AND MIDLAND HOSPITAL FOR SKIN AND URINARY DISEASES.—Clinical Assistant for three months. Salary at rate of 52 guineas per annum. Also Clinical Assistant to Electrical Department for six months. Salary at rate of 52 guineas per annum.

BIRMINGHAM, CITY FEVER HOSPITAL, Little Bromwich.—Assistant Medical Officer. Salary £160 per annum, with board and residence.

BIRMINGHAM CITY HOSPITAL, Lodge-road.—Assistant Resident Medical Officer. Salary £160 per annum, with board, residence, &c.

BRADFORD CITY HOSPITAL, Leeds-road.—Assistant Resident Medical Officer. Salary £200 per annum, with board and residence.

BRADFORD ROYAL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, and washing.

BRENTFORD UNION INFIRMARY, WORKHOUSE, AND SCHOOLS, Isleworth, W.—Second Assistant Medical Superintendent, unmarried. Salary £150 per annum.

BRIGHTON COUNTY BOROUGH ASYLUM, Haywards Heath.—Locum Tenens Assistant Resident Medical Officer for three months. Salary £5 5s. a week.

BRIGHTON, ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN, Dyke-road.—House Surgeon for six months. Salary at rate of £100 per annum, with board, lodging, and washing.

BRIGHTON, ROYAL SUSSEX COUNTY HOSPITAL.—House Physician, unmarried. Salary £100 per annum, with apartments, board, and laundry.

BRISTOL ROYAL INFIRMARY.—House Surgeon for Throat, Nose, and Ear Department. Salary at rate of £100 per annum, with board, lodging, and laundry.

BURSLEM, HAYWOOD HOSPITAL.—Female Resident Medical Officer. Salary £100 per annum, with board, residence, and laundry.

BURY COUNTY BOROUGH.—Clinical Tuberculosis Officer and Assistant to Medical Officer of Health. Salary £500 per annum.

BURY INFIRMARY.—Junior House Surgeon. Salary £100 per annum, with board, residence, and washing.

CARDIFF, KING EDWARD VII.'S HOSPITAL.—House Surgeon for the Ophthalmic and Ear, Nose and Throat Departments. Salary £100 per annum, with board, residence, and laundry.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Judd-street, W.C.—Assistant Surgeon.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—House Physician. Salary £90 per annum, with board, apartments, and laundry.

CITY OF LONDON LYING-IN-HOSPITAL, City-road.—Pathologist and Registrar.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Surgeon. Salary £100 per annum, with board, washing, and residence.

DARLINGTON HOSPITAL AND DISPENSARY.—House Surgeon, unmarried. Salary £170 per annum, with board, lodging, and laundry.

DEVON COUNTY ASYLUM, Exminster.—Assistant Medical Officer. Salary £225 per annum, with quarters, board, and laundry.

DEVONPORT, ROYAL ALBERT HOSPITAL.—House Surgeon, unmarried. Salary £150 per annum, with board and laundry.

DURHAM COUNTY ASYLUM, Winterton, Ferryhill.—Junior Assistant Medical Officer, unmarried. Salary £200 per annum, with board, lodging, and washing.

DURHAM COUNTY HOSPITAL.—House Surgeon. Salary £120 per annum, with board and lodging.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN Shadwell, E.—Medical Officer to Casualty Department for six months. Salary at rate of £100 per annum, with luncheon and tea. Also House Physician. Salary at rate of £75 per annum, with board, residence, and laundry.

ECCLES AND PATRICROFT HOSPITAL.—House Surgeon. Salary £70 per annum, with board, washing, and lodging.

EGYPT, PUBLIC HEALTH DEPARTMENT.—Medical Officer, unmarried. Salary at rate of £600 per annum.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—House Surgeon. Salary at rate of £75 per annum, with board, residence, and washing.

GREENOCK INFIRMARY.—House Surgeon. Board and residence provided.

HALIFAX ROYAL INFIRMARY.—Second House Surgeon and Third House Surgeon, unmarried. Salary £120 and £100 per annum respectively, with residence, board, and washing.

HAMPSHIRE COUNTY COUNCIL.—Two Assistant County Medical Officers of Health. Salary £300 per annum. Also Tuberculosis Officer. Salary £400 per annum.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL.—Casualty Officer at Out-patients' Department, Camden Town. Salary at rate of £70 per annum, with board, residence, and laundry.

HARTLEPOOLS HOSPITAL.—Locum Tenens for June. Board, washing, and lodging provided.

HEMEL HEMPSTEAD, WEST HERTS HOSPITAL.—Resident Medical Officer. Salary £120 per annum, with rooms, board, and washing.

HUDDERSFIELD ROYAL INFIRMARY.—Assistant House Surgeon. Salary £80 per annum, with board, rooms, and washing.

HUDDERSFIELD, STORTHES HALL ASYLUM, Kirkburton.—Locum Tenens for about three months. Salary 5 guineas per week, with board, lodging, and attendance.

HULL CITY EDUCATION COMMITTEE.—Male Assistant School Medical Officer and Female Assistant School Medical Officer. Salary £300 per annum each.

KING'S LYNN, WEST NORFOLK AND KING'S LYNN HOSPITAL.—House Surgeon. Salary £120 per annum.

KIRKMABRECK PARISH, Creetown, Kirkcudbrightshire.—Medical Officer. Salary £40 per annum.

LEEDS, CITY HOSPITALS FOR INFECTIOUS DISEASES AND TUBERCULOSIS.—Assistant Medical Officer, unmarried. Salary at rate of £130 per annum, with board, lodging, and washing.

LEEDS GENERAL INFIRMARY.—House Surgeon for six months. Also House Surgeon. Board, residence, and laundry provided in each case. Also Resident Medical Officer for six months at Ida and Robert Arthington Hospitals. Salary £60 per annum, with board, residence, and laundry. Also Assistant Clinical Pathologist. Salary £150 per annum.

LEICESTER POOR-LAW INFIRMARY.—Second Resident Assistant Medical Officer. Salary £150 per annum, with rations, apartments, and washing.

LONDON FEVER HOSPITAL, Liverpool-road, N.—Assistant Resident Medical Officer. Salary £150 per annum, with residence and board.

LONDON HOSPITAL, Whitechapel, E.—Medical Registrar. Salary £100 per annum. Also Surgical Registrar.

MACCLESFIELD GENERAL INFIRMARY.—House Surgeon. Salary £125 per annum, with residence, board, and laundry.

MAIDSTONE, KENT COUNTY ASYLUM.—Fourth Assistant Medical Officer, unmarried. Salary £250 per annum, with quarters, board, attendance, washing, &c.

MANCHESTER, HULME DISPENSARY, Dale-street, Stretford-road.—House Surgeon. Salary £180 per annum, with apartments, attendance, &c.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Park-place, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

MANCHESTER ROYAL INFIRMARY.—Surgical Registrar. Salary £75 per annum.

METROPOLITAN ASYLUMS BOARD INFECTIOUS HOSPITALS.—Junior Assistant Medical Officers, unmarried. Salary £180 per annum, with board, lodging, and washing.

MIDDLESBROUGH, NORTH ORMESBY HOSPITAL.—Assistant House Surgeon. Salary at rate of £100 per annum first six months and £110 per annum afterwards, with board, apartments, washing, and attendance.

MIDDLESEX COUNTY COUNCIL.—Assistant Tuberculosis Officer. Salary £300 per annum.

NEWARK-UPON-TRENT HOSPITAL.—Resident Medical Officer, unmarried. Salary £120 per annum, with board, lodging, and laundry.

NEW HOSPITAL FOR WOMEN, Euston-road.—Female House Physician, Two House Surgeons, and Obstetric Assistant, all for six months. Also Clinical Assistants for Out-patient Department, and Assistant Pathologist.

NEW ZEALAND, UNIVERSITY OF OTAGO.—Professor of Anatomy. Salary £800 per annum.

NOTTINGHAM, BAGTHORPE INSTITUTION AND INFIRMARY.—Assistant Resident Medical Officer, unmarried, for six months. Salary at rate of £165 per annum, with apartments, &c.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House Physician for six months. Salary at rate of £100 per annum, with board, residence, and laundry. Also Locum Tenens for 13 weeks. Salary £4 4s. per week, with board, residence, and laundry.

NOTTS COUNTY COUNCIL.—Assistant Tuberculosis Officer. Salary £300 per annum.

PADDINGTON INFIRMARY AND WORKHOUSE.—Second Assistant Medical Officer. Salary at rate of £140 per annum, with board, lodging, and washing.

PLAISTOW FEVER HOSPITAL, London, E.—Second Assistant Medical Officer, unmarried. Salary £100 per annum, with rooms and all found.

PORTSMOUTH LUNATIC ASYLUM.—Medical Superintendent. Salary at rate of £600 per annum.

PORTSMOUTH ROYAL HOSPITAL.—Three House Surgeons for six months. Salaries: Senior House Surgeon, £110 per annum, and other two £90 per annum, with board, &c.

PORTSMOUTH WORKHOUSE INFIRMARY, WORKHOUSE, AND CHILDREN'S HOME.—Second Assistant Resident Medical Officer, unmarried. Salary £130 per annum, with apartments, rations, &c.

PRESTON, COUNTY ASYLUM, Whittingham, Lancs.—Junior Assistant Medical Officer, unmarried. Salary £250 per annum, with board, apartments, &c.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—House Surgeon for six months. Salary £80 per annum, with board, residence, and washing.

ROCHDALE INFIRMARY AND DISPENSARY.—Junior House Surgeon, unmarried. Salary £110 per annum, with board, residence, and laundry.

ROTHERHAM HOSPITAL.—Senior and Junior House Surgeons. Salaries £150 and £100 respectively, with board, lodging, and washing.

ROYAL EYE HOSPITAL, Southwark, S.E.—Junior House Surgeon for six months. Salary £50 per annum, with board and residence. Also Clinical Assistants.

ST. HELENS COUNTY BOROUGH EDUCATION COMMITTEE.—Dentist. Salary £250 per annum.

ST. MARK'S HOSPITAL FOR CANCER, FISTULA, AND OTHER DISEASES OF THE RECTUM, City-road, E.C.—House Surgeon. Salary £100 per annum, with board, lodging, and washing. Also Junior Anæsthetist. Salary £25 per annum.

ST. MARYLEBONE GENERAL DISPENSARY, 77, Welbeck-street, Cavendish-square, W.—Honorary Surgeon for Throat, Nose, and Ear Department. Also Honorary Medical Radiographer.

SALFORD ROYAL HOSPITAL.—Junior House Surgeon and Casualty House Surgeon. Salary at rate of £80 per annum each, with board and residence.

SALISBURY INFIRMARY.—Assistant House Surgeon, unmarried. Salary £75 per annum, with apartments, board, lodging, and washing.

SHEFFIELD, EAST END BRANCH OF THE CHILDREN'S HOSPITAL (Out-patient Department).—Female House Surgeon. Salary £100 per annum, with board and residence.

SHEFFIELD, JESSOP HOSPITAL FOR WOMEN.—Assistant House Surgeon, unmarried. Salary £80 per annum, with board, residence, and laundry.

SHEFFIELD ROYAL INFIRMARY.—Ophthalmic House Surgeon for six months. Salary £80 per annum, with board and residence.

SHEFFIELD UNION HOSPITAL, Firvale.—Resident Assistant Medical Officer, unmarried. Salary £140 per annum, with apartments, rations, &c.

SHREWSBURY, SALOP INFIRMARY.—House Physician. Salary at rate of £90 per annum, with board and apartments.

SOUTH LONDON HOSPITAL FOR WOMEN.—Female Anæsthetist.

STROUD GENERAL HOSPITAL.—House Surgeon. Salary £120 per annum, with board, lodging, and washing.

SUNDERLAND ROYAL INFIRMARY.—Junior House Surgeon. Salary £100 per annum, with board, residence, and laundry.

SWANSEA GENERAL AND EYE HOSPITAL.—Two House Surgeons. Salary £125 per annum, with board, washing, and attendance.

ULSTER HOSPITAL CORPS.—Surgeons.

UNIVERSITY OF LONDON, KING'S COLLEGE.—Demonstrator of Physiology. Salary £120 per annum.

WALSALL AND DISTRICT HOSPITAL.—Assistant House Surgeon. Salary £110 per annum, with board, residence, and laundry.

WEST HAM AND EASTERN GENERAL HOSPITAL.—Junior House Physician and Junior House Surgeon. Salary at rate of £75 per annum, with board, residence, and washing.

WEST HAM UNION SICK HOME, 96, Forest lane, Forest Gate, E.—Second Assistant Resident Medical Officer. Salary £160 per annum.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Two Assistant Anæsthetists. Also Second Resident Casualty Officer. Board, lodging, and laundry provided.

WESTMORLAND CONSUMPTION SANATORIUM AND HOME, Meathop, Grange-over-Sands.—Second Assistant Medical Officer. Salary £150 per annum, with apartments, board, and laundry.

WIGAN, ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY.—Senior House Surgeon. Salary £170 per annum, with board, apartments, and washing. Also Junior House Surgeon. Salary £150 per annum, with board, apartments, and washing.

WOKINGHAM, BERKSHIRE, PINEWOOD SANATORIUM.—Assistant Medical Officer, unmarried. Salary £150 per annum, with board, residence, and laundry.

WREXHAM INFIRMARY.—Resident House Surgeon. Salary £120 per annum, with board, lodging, and washing.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of a vacancy for a Certifying Surgeon under the Factory and Workshop Acts at Brackley, in the county of Northants.

Births, Marriages, and Deaths.

BIRTHS.

DUIGAN.—On May 13th, at Beech House, East Dereham, the wife of V. J. Duigan, M.R.C.S., of a son.

MARRIAGES.

ALEXANDER—GRAY.—On May 14th, at the Parish Church, Sundridge, Kent, James Finlay Alexander, M.A., M.D. Cantab., to Freda Brenton Gray, daughter of Mrs. Gray, of Linwood, Bastbourne.

DEATHS.

CRAVEN.—On May 17th, at 7, Albert-road, Birkdale, Southport, suddenly, in his 63rd year, Robert Musgrave Craven, M.R.C.S., D.P.H., Medical Officer of Health for the Combined County Districts of Westmorland.

WALLACE.—At his residence, Darenth Lodge, Clapton Common, Richard Unthank Wallace, M.B. Lond., M.R.C.S. Eng., in his 81st year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

DR. PETER CHAMBERLEN.

THE following advertisement appeared in the *Times* of May 16th, 1914:—

"CHAMBERLEN. Any descendants of Dr. Peter Chamberlen, Royal Physician, of London (died 1683), would oblige by COMMUNICATING with C., Field House, Minchinhampton, Glos."

We do not know the object of this advertisement, but some details of Dr. Peter Chamberlen, quoted from Munk's Roll of the Royal College of Physicians, may not be familiar to all our readers. Peter Chamberlen was the son of Peter Chamberlen, a surgeon, who practised in the City of London. He was born on May 8th, 1601, was educated at Merchant Taylors' School, and graduated Doctor of Medicine at Padua in 1619 and at Cambridge in 1621. Dr. Chamberlen was admitted a candidate of the College of Physicians on July 6th, 1626, and a Fellow on April 7th, 1628. On Nov. 23rd, 1629, he was by a vote of the College dismissed from his Fellowship. His reputation must have been considerable, as the Czar wrote with his own hand a letter to Charles I., begging him to allow the doctor to enter his service. He was extensively engaged in the practice of midwifery, and attempted to obtain from the Crown authority to organise the female practitioners into a company with himself at their head as president and examiner. He purchased the Manor House of Woodham Mortimer Hall, near Malden, Essex, where a curious collection of midwifery instruments was discovered about 1815. He died on Dec. 22nd, 1683, and was buried at the Church of Woodham Mortimer. One of his sons erected a monument to his memory in this church, which stated that "The said Peter Chamberlen took ye degree of Doctor in Physick in severall universities, both at home and abroad, and lived such above three score years, being Physician in Ordinary to three kings and queens of England, viz., King James and Queen Anne, King Charles ye first and Queen Mary, King Charles ye Second and Queen Katherine, and also to some foreign princes, having travelled to most parts of Europe, and speaking most of the languages." He was a voluminous writer. Dr. Peter Chamberlen, senior, is more generally remembered as the inventor of the midwifery forceps, by the use of which he and his descendants acquired a great reputation as accoucheurs, keeping their secret to themselves for a long period of time.

"MILLIBARS."

To the Editor of THE LANCET.

SIR,—I am obliged to you for publishing my letter under the above heading in THE LANCET of May 16th. May I, however, correct an error in the third paragraph which escaped my notice when revising the proof. The "unit of acceleration" is the acceleration of 1 unit of velocity per second, or "1 centimetre per second per second," not, as it has been printed, "an acceleration of 1 centimetre per second."

I am, Sir, yours faithfully,

JOHN W. MOORE, M.D., D.Sc., F.R. Met. Soc.

Dublin, May 16th, 1914.

A MEDICAL MAN AND THE SPEED-LIMIT.

Mr. H. J. Bates was summoned recently at Evesham police-court for driving a motor-cycle at a speed dangerous to the public at Norton, and with failing to produce his licence. The evidence of a police constable was to the effect that the defendant drove at or about 40 miles per hour, and that he was stopped near a dangerous corner where several accidents had occurred. Other witnesses put the speed at 30 miles per hour. The defendant stated on oath that his pace was 20 miles per hour, and that he was fully aware of the dangerous corner which he was approaching. His evidence was corroborated by another medical man, Mr. H. H. Sampson, who was with him at the time, and a third medical practitioner, who had been riding in front of the defendant at or about 20 miles per hour, and had not been stopped by the police, corroborated with regard to the speed adopted. The magistrates dismissed the case, but fined the defendant 5*s.* and 8*s.* costs for failing to produce his licence. Mr. Bates is to be congratulated upon having successfully defended himself against a charge which involves the infliction of danger upon the public using the highway. Medical men may at any time be impelled by circumstances in which many would sympathise with them to break the law in order to reach a patient as quickly as possible, and for this reason it is very desirable that, being constant users of motor vehicles, they should earn the reputation of using them with consideration for others.

GRADUS AD OLYMPUM.

THE fact that one of the claimants to the Barony of Strabolgi, now in abeyance with the ancient Baronies of Burgh (1529) and Cobham of Kent (1313), is a medical man, Dr. Reginald Gervase Alexander, J.P., of Halifax and Bradford, naturally attracts attention to legal proceedings that would otherwise be devoid of medical interest. The circumstance that Dr. Alexander had his claim as a co-heir with one other claimant to the Baronies of Burgh and Cobham declared valid in 1912 by the Committee of Privileges of the House of Lords was the subject of an annotation in THE LANCET of August 10th, 1912. The same Committee has now further allowed the petition of three co-heirs, of whom Dr. Alexander is one, to the Barony of Strabolgi (1318), and will so advise His Majesty. The further development of the matter now rests with the King. Meanwhile, we congratulate Dr. Alexander on having been successful in getting the validity of his claims upheld in all three instances.

CONJOINED TWINS.

A NEW case of conjoined twins has occurred in America, and is reported in the February number of *American Medicine*. The mother is a white woman, aged 44; by a previous husband she has a son who is now 23 years of age, and quite normal. On Nov. 28th, 1913, she gave birth to two girl children, both a good deal below the normal standard of full term development; it is not stated what period of utero-gestation had been reached. They are united by a piece of tough fibrous tissue, about 4 inches thick and 12 inches in circumference, below the sternum, and reaching nearly down to the umbilicus. They have entirely separate thoracic and abdominal organs, except that the two peritoneal cavities are in communication through the band of union. Possibly it is due to this fact that a curious phenomenon occurs in respiration, for one twin inhales as the other exhales, and *vice versâ*. One child is very slightly larger than the other in most of its measurements, and appears stronger; this larger twin has a pulse rate of 130, whereas the smaller one's rate is but 120. The blood of the two children also exhibits differences. The larger child has 6,960,000 red corpuscles per c.mm. and 7500 leucocytes; the smaller one has 6,280,000 and 6335 respectively. The children are progressing favourably, and a photograph reproduced with the description shows them being fed, one from each breast.

MACAURA.

SOME of our readers may remember the proceedings of an American named Macaura who established institutes for the cure of various diseases by vibratory and other treatment a few years ago. We referred to the matter in our issue of Feb. 3rd, 1906, p. 347, and April 7th, 1906, p. 1014. In 1908 the proprietors of this journal took proceedings to restrain him from using the name of THE LANCET in a wrongful manner, as described in our issue of June 6th, 1908, p. 1673. It is now reported from Paris that Macaura was on May 14th sentenced to three years' imprisonment and to a fine of £120 for swindling, and that the medical societies who intervened were also awarded damages varying from £80 to £120. Other people who assisted Macaura in France were likewise sentenced to imprisonment and fine. The court set aside the charge of illegally practising medicine and convicted the accused of swindling.

F. G. W.—Without knowing further details, such as age of patient, nature of malady, and possible susceptibility to the drug, it is difficult to give a definite answer; every third day would probably be a safe interval to begin with, but this method requires caution.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, May 20th, 1914.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
May 14	30·26	S.W.	...	115	69	49	54	57	Fine
,, 15	30·27	S.E.	...	113	67	54	55	57	Fine
,, 16	30·35	E.	...	118	67	50	52	55	Fine
,, 17	30·41	E.	...	120	69	46	53	57	Fine
,, 18	30·36	E.	...	121	74	46	55	60	Fine
,, 19	30·36	E.	...	109	74	55	56	61	Fine
,, 20	30·37	S.E.	...	102	75	54	56	60	Fine

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY, Burlington House, London, W.

THURSDAY.—Prof. H. E. Armstrong and Mr. E. F. Walker: Studies of the Processes Operative in Solutions—XXIX., The Disturbance of the Equilibrium in Solutions by "Strong" and "Weak" Interfering Agents.—Mr. E. E. Fournier d'Albe: On a Type-reading Optophone (communicated by Sir Oliver Lodge).—Mr. L. H. Walter: An Application of Electrolytically-produced Luminosity Forming a Step towards Telectroscopy (communicated by Sir Alfred Ewing).—Mr. L. V. King: On the Convection of Heat from Small Cylinders in a Stream of Fluid and the Determination of the Convection Constants of Small Platinum Wires with Applications to Hot-wire Anemometry (communicated by Prof. H. T. Barnes).

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MONDAY.

SECTION OF ODONTOLOGY (Hon. Secretaries—Robert McKay, F. Coleman): at the Royal College of Surgeons, Lincoln's Inn Fields, W.C.: at 8 P.M.

Annual General Meeting.—Election of Officers and Council for Session 1914-1915.

Mr. J. F. Colyer will give an Account of the Work of the Odontological Museum during the Past Year.

Casual Communication:
By Mr. Wm. de C. Prideaux.

TUESDAY.

SECTION OF MEDICINE (Hon. Secretaries—H. Batty Shaw, John Fawcett): at 5.30 P.M.

Annual General Meeting.—Election of Officers and Council for Session 1914-1915.

Papers:
Dr. Samuel West: The Murmurs Heard in Dilated Hearts and their Explanation.
Dr. J. Michell Clarke: Pathological Changes in a Case of Leukæmia from Prolonged Use of X Rays.

WEDNESDAY.

SECTION OF LARYNGOLOGY (Hon. Secretaries—E. A. Peters, Cecil I. Graham): at 3.30 P.M.

Demonstration:
Professor Gustav Killian (University of Berlin): Suspension Laryngoscopy on Living Subjects.

Cases:
Will be shown by Mr. E. B. Waggett, Mr. E. Davis, Mr. Stuart-Low, Dr. James Donelan, and others.

SECTION OF THE HISTORY OF MEDICINE (Hon. Secretaries—Raymond Crawfurd, D'Arcy Power): at 5 P.M.

Annual General Meeting.—Election of Officers and Council for Session 1914-1915.

Mr. Edward Lovett: London Folk Medicine (illustrated).
Dr. C. E. Lea: Dr. Thomas Spens—the First Describer of the Stokes-Adam Syndrome.
Dr. Singer: Some Notes on the History of the Microscope.
Sir William Osler, Bart., M.D., F.R.S.: Suggested Scheme for the Restoration of the Tomb of Avicenna.

THURSDAY.

SECTION OF LARYNGOLOGY.

Members of this Section are reminded that the SEMON LECTURE will be delivered by Professor Gustav Killian on Suspension Laryngoscopy and its Practical Use in the Robert Barnes Hall at 5 P.M.

They are also reminded that the Combined Annual Dinner of the Sections of Laryngology and Otology will be held at the Trocadero Restaurant at 7.30 P.M.

HARVEIAN SOCIETY OF LONDON, Paddington Infirmary, Harrow-road, W.

THURSDAY,—8.30 P.M., Clinical Meeting.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. J. L. Bunch: Clinique (Skin). 5.15 P.M., Lecture:—Dr. H. Crichton-Miller: The Practical Treatment of Insomnia.

TUESDAY.—4 P.M., Dr. C. M. H. Howell: Clinique (Medical). 5.15 P.M., Lecture:—Mr. S. A. Boyd: Splenectomy.

WEDNESDAY.—4 P.M., Mr. D. C. L. Fitzwilliams: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. E. C. Hort: Bacteriological Examination of the Blood and Urine in Everyday Practice.

THURSDAY.—4 P.M., Dr. K. Wilson: Clinique (Medical). 5.15 P.M., Lecture:—Sir George H. Savage: The Feeble-minded and their Care.

FRIDAY.—4 P.M., Mr. F. A. Juler: Clinique (Eye). 5.15 P.M., Lecture:—Dr. W. Wingrave: The Pathology of "Sore Throat."

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 10.30 A.M., Medical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman: Diseases of the Eye. 5 P.M., Lecture:—Mr. D. Armour: Surgery of the Pancreas and Bile Ducts.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. Dr. Owen: Demonstration of Cases in Wards. 12 noon, Mr. T. Gray: Demonstration of Fractures, &c. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin. 5 P.M., Lecture:—Mr. D. Armour: Surgery of the Pancreas and Bile Ducts.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 11 A.M., Mr. Souttar: Demonstration of Minor Operations. 12 noon, Lecture:—Mr. Souttar: Abdominal Diagnosis. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women and Diseases of the Eye. 5 P.M., Lecture:—Mr. D. Armour: Surgery of the Pancreas and Bile Ducts.

THURSDAY.—9 A.M., Dr Bernstein: Bacterial Therapy Department. 10.30 A.M., Dr. Simson: Gynæcological Demonstration. 12 noon, Lecture:—Dr. G. Stewart: Neurological Cases. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye. 5 P.M., Lecture:—Mr. D. Armour: Surgery of the Pancreas and Bile Ducts.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12.15 P.M., Lecture:—Dr. Bernstein: Applied Pathology. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin. 5 P.M., Lecture:—Mr. D. Armour: Surgery of the Pancreas and Bile Ducts.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 12 noon, Lecture:—Mr. Souttar: Surgical Anatomy of the Abdomen. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—Out-patient Demonstrations:—10 A.M. Dr. H. B. Carlill: Medical. Mr. H. Curtis: Surgical. 12 noon, Mr. G. N. Biggs: Throat, Nose, and Ear.—2.15 P.M., Mr. W. Turner: Surgery. 3 P.M., Mr. W. Turner: Operations. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.15 P.M., Mr. R. Lake: Throat, Nose, and Ear.

TUESDAY.—Out-patient Demonstrations:—10 A.M., Dr. C. E. Zundel: Medical. Mr. Cole: Surgical. 12 noon, Dr. H. MacCormac: Skin.—2 P.M., Mr. L. McGavin: Operations. 2.15 P.M., Mr. R. Carling: Surgery. 3.15 P.M., Dr. G. Rankin: Medicine. 4.15 P.M., Sir Malcolm Morris: Skin. 4.30 P.M., Special Lecture:—Dr. G. Holmes: Paraplegia.

WEDNESDAY.—Out-patient Demonstrations: 10 A.M., Dr. H. B. Carlill: Medical. Mr. Cecil Rowntree: Surgical. 11 A.M., Mr. R. R. Bickerton: Eye.—2 P.M., Mr. L. V. Cargill or Mr. Choyce: Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.15 P.M., Mr. Cargill: Eye Clinique. 4.30 P.M., Mr. C. C. Choyce: Surgery.

THURSDAY.—Out-patient Demonstrations:—10 A.M., Dr. H. R. Prentice: Medical. Mr. H. Curtis: Surgical. 12 noon, Mr. G. N. Biggs: Throat, Nose, and Ear.—2 P.M., Mr. R. Carling or Mr. W. Turner: Operations. Dr. A. Davies: Pathological Demonstration. 3.15 P.M., Dr. R. Wells: Medicine. 4.30 P.M., Special Lecture:—Mr. W. Turner: Appendicitis.

FRIDAY.—Out-patient Demonstrations:—10 A.M., Dr. C. E. Zundel: Medical. Mr. Cole: Surgical. 12 noon, Dr. H. MacCormac: Skin.—2 P.M., Mr. L. McGavin: Operations. 2.15 P.M., Sir John Rose Bradford: Medicine. 3.15 P.M., Mr. L. McGavin: Surgery.

SATURDAY.—Out-patient Demonstrations: 10 A.M., Dr. H. R. Prentice: Medical. Mr. Cecil Rowntree: Surgical. 11 A.M., Mr. R. R. Bickerton: Eye.—10 A.M., Col. Barry: Radiography.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patient (Mr. E. Gillespie). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Gynæcological (Dr. Banister). 3 P.M., Medical In-patients (Dr. R. M. Leslie).

TUESDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. Howell Evans); Nose, Throat, and Ear (Mr. H. D. Gillies). X Ray and Electrical Methods (Dr. Metcalfe). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting).

WEDNESDAY.—Clinics:—2 P.M., Throat Operations (Mr. Gillies). 2.30 P.M., Children's Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. Dorell). 3 P.M., Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan). 5.30 P.M., Eye Operations (Mr. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson); X Rays and Electrical Methods (Dr. Metcalfe).

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. E. Gillespie); Eye (Mr. Dorell). 3 P.M., Medical In-patient (Dr. G. P. Chappel). Clinical Pathology and Pathological Demonstration.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, Medical School, City-road, E.C.

MONDAY.—1.30 P.M., Department for the Prevention of Consumption. 2 P.M., Cardiac Department, Dr. Stott; Out-patient Department, Dr. Phear, Dr. S. Thompson. 3 P.M., Wards, Dr. Phear.

TUESDAY.—9 A.M., Laryngological Department, Mr. Mant. 1.30 P.M., Department for the Prevention of Consumption. 2 P.M., Out-patient Department, Dr. M. Leslie, Dr. B. King; Operations, Mr. A. Evans. 3 P.M., Wards, Dr. White. 4 P.M., Wards, Dr. M. Leslie.

WEDNESDAY.—2 P.M., Wards, Dr. A. Davies; Out-patient Department, Dr. Drysdale, Dr. Kellie. 4 P.M., Wards, Dr. Drysdale. 4.30 P.M., Roentgen Ray Department, Dr. Jordan.

THURSDAY.—9.30 A.M., Dental Department, Mr. G. Thomson. 10 A.M., Cardiac Department, Dr. Stott. 1.30 P.M., Department for the Prevention of Consumption. 2 P.M., Out-patient Department, Dr. Phear, Dr. S. Thompson. 4.30 P.M. Laryngological Department, Mr. Mant.

FRIDAY.—1.30 P.M., Department for the Prevention of Consumption. 2 P.M., Wards, Dr. Calvert; Out-patient Department, Dr. M. Leslie, Dr. B. King.
SATURDAY.—10 A.M., Out-patient Department, Dr. Drysdale, Dr. Kellie. 11.30 A.M., Roentgen Ray Department, Dr. Jordan.

LONDON HOSPITAL MEDICAL COLLEGE (UNIVERSITY OF LONDON), Clinical Theatre, London Hospital, Mile End-road, E.

Course of Lectures on Tuberculosis for Post-Graduates and Senior Students:—
TUESDAY.—12 noon, Dr. C. H. Miller: Clinical Aspects—Infiltration, Consolidation, Softening, Excavation and Fibrosis. 2 P.M., Dr. C. Wall: History Taking and Physical Examination.
WEDNESDAY.—10.30 A.M., Dr. H. L. Lack: Tuberculosis of the Throat, Nose, &c. 4 P.M., Dr. P. Kidd: Types.
THURSDAY.—12 noon, Mr. A. B. Roxburgh: Tuberculosis of the Eye, &c. 2 P.M., Dr. R. Hutchison: Tuberculosis in Infancy and Childhood.
FRIDAY.—12 noon, Dr. C. H. Miller: Stages.

GUY'S HOSPITAL MEDICAL SCHOOL, London Bridge, S.E.

Course of Lectures on Industrial Medicine:—
FRIDAY.—Lecture IV.:—Dr. F. Shufflebotham: Industrial Fibroid Lung.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.

WEDNESDAY.—4.30 P.M., Demonstration:—Dr. Perkins: The Selection of Cases for Sanatorium Treatment.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.

Course of Demonstrations for Post-Graduates:—
WEDNESDAY.—4 P.M., Dr. O. K. Williamson: Blood Pressure.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY AND FRIDAY.—3.30 P.M., Lectures:—Dr. A. Turner: Clinical Cases.

LONDON LOCK HOSPITAL, 91, Dean-street, Soho, W.

Special Course of Instruction in Venereal Diseases, for Post-Graduates and Students, with Practical Demonstrations of the Various Methods of Treatment:—
MONDAY.—Clinics:—1 P.M., Mr. Ryall; 6 P.M., Mr. Gibbs. 5 P.M., Lecture:—Mr. Phillips: Visceral Syphilis.
TUESDAY.—Clinics:—2 P.M., Mr. Lane; 6 P.M., Mr. Paterson.
WEDNESDAY.—Clinic:—6 P.M., Mr. Shillitoe. 5 P.M., Lecture:—Mr. Shillitoe.
SATURDAY.—Clinic:—2 P.M., Mr. McDonagh.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.
THURSDAY.—5.15 P.M., Clinical Lecture.

MANCHESTER HOSPITALS POST-GRADUATE CLINICS.

TUESDAY.—MANCHESTER AND SALFORD HOSPITAL FOR SKIN DISEASES, Quay-street.—4.30 P.M., Mr. Savatard: Tumours of the Skin.
THURSDAY.—ANCOATS HOSPITAL—4.30 P.M., Dr. C. E. Lea: Tachycardia.

UNIVERSITY OF LEEDS, Great Hall of the University, College-road.

Special Lectures on Medical Subjects:—
WEDNESDAY.—4 P.M., Sir W. Arbuthnot Lane: Intestinal Stasis.

For further particulars of the above Lectures, &c., see Advertisement Pages.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced:—

May 1st–Nov. 1st (Lyons).—International Town Hygiene Exhibition.
„ 15th–Oct. 15th (Berne).—Swiss National Exhibition.
May–October (London, Shepherd's Bush).—Anglo-American Exposition.
June 8th–10th (Berne).—Seventh International Dairy Congress.
„ 9th–12th (Birmingham).—National Council of Nurses' Annual Conference and Nursing Exhibition.
„ 15th–18th (Portsmouth).—International Abolitionist Conference (Prostitution).
„ 18th–20th (Newcastle-upon-Tyne).—Fifth Annual Conference of the British Hospitals Association.
„ 18th–24th (London, Church House, Westminster).—International Conference on the Blind.
June–July (Groningen).—University of Groningen 300th Anniversary Celebration.
July 2nd and 3rd (Liverpool).—National Conference on Infant Mortality.
„ 6th–11th (Blackpool).—Twenty-ninth Congress of the Royal Sanitary Institute.
„ 7th–10th (St. John, N.B.).—Canadian Medical Association.
„ 8th–10th (Oxford).—Ophthalmological Congress.
„ 15th–23th (Edinburgh).—Congress of the Royal Institute of Public Health.
„ 21st–23rd (Chester).—British Pharmaceutical Conference.
„ 27th–31st (London).—Fifth Annual Session of the Clinical Congress of Surgeons of North America.
„ 28th–31st (Aberdeen).—Eighty-second Annual Meeting of the British Medical Association.

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Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

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We cannot prescribe or recommend practitioners.

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The following journals, magazines, &c., have been received:—Revue de Chirurgie, Revue de Médecine, Revue de Gynécologie, Deutsche Zeitschrift für Nervenheilkunde, Journal of Physiology, American Journal of Surgery, Surgery, Gynecology and Obstetrics, British Dental Journal, Annali di Medicina Navale e Coloniale, Archives Internationales de Neurologie, American Journal of Obstetrics, Unit, American Medicine.

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Y.—Dr. Warrington Yorke, Runcorn.

Z.—Messrs. C. Zimmermann and Co., Lond.

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A.—Dr. R. G. Adams, Blenheim, New Zealand; Anglo-American Pharmaceutical Co., Croydon; Messrs. Armour and Co., Lond.; Dr. P. Allan, Halesowen; A. M. J.

B.—Dr. C. L. Birmingham, Westport; Dr. C. Burnham, Ross; Bootham Park, York, House Steward of; *Banffshire Journal*, Banff, Manager of; Bristol General Hospital, Secretary of; Mr. W. H. Barrett, Chichester; Messrs. Baker and Co., Oxford; Birkenhead and Wirral Children's Hospital, Treasurer to the; Bombay Medical Union, Hon. Librarian of; Bristol Royal Infirmary, Secretary of; Barnwood House Hospital, Gloucester, Medical Superintendent of.

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L.—Leeds University, Accountant to the; London University, Accountant to the; Messrs. E. and S. Livingstone, Edinburgh; Mr. H. H. Lacy, Warwick; London Temperance Male and Female Nurses' Co-operation, Secretary of; L. E. T.

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U.—Ulster Hospital Corps, Lond., Organiser to.

V.—Victoria Hospital, Burnley, Secretary of; Mr. A. C. Van Bruen, Plymouth; Messrs. G Van Abbott and Son, Lond.

W.—Dr. Malcolm Watson, Klang; Dr. J. A. Watson, Port Morant; Wolverhampton Education Committee, Accountant to the; Mr. W. S. Wilkinson, Irvinestown; Messrs. Wilcox and Co., Lond.; Messrs. J. Woolley, Sons, and Co., Manchester; West Riding County Council, Wakefield, Accountant to the; Messrs. Willows, Francis, Butler, and Thompson, Lond.; Mr. A. C. Wilson, Formby; West Norfolk and Lynn Hospital, King's Lynn, Secretary of.